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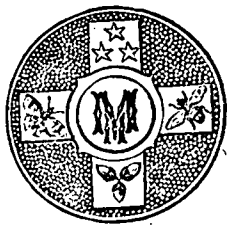
BIBLE TEACHINGS IN NATURE.



BIBLE TEACHINGS IN NATURE.

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BY THE

REV. HUGH MACMILLAN,

AUTHOR OF "FIRST FORMS OF VEGETATION."

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PREFACE.

ONE of the most distinctive features of the present day is the general taste for grand and beautiful scenery. Nature is now loved for her own sake, apart from all her uses to man. Not only poets and painters, but society as a whole, recognise the fact that the world owes its picturesqueness to its waste places. It has been discovered that a mountain is something more than a mere huge heap of earth and rock—and that a lake mirrors in its waters other and greater beauty than that of the surrounding landscape. The terror of the volcano, and the grandeur of the snow-peak, when mingled with the smiles of warm regions flushed with corn and wine, are now felt to make a Divine harmony. Only an age like ours, amid all its Utilitarianism, could find with Ruskin its highest ideal of an earthly paradise on the slopes of a great snow Alp, bright below with the green of forest and pasture, and sublime above with the purple of beetling precipice, and the silver of virgin summit, seven times purified in the fires of Heaven.

Closely connected with this general love of scenery is a wide-spread appreciation of nature—not as a mere frame-work of circumstances—but as "a chamber of imagery," as a system of types and symbols for the education of the immortal spirit. Scripture and science, after a severe and prolonged contest, are now happily reconciled; and both are found to be mutually helpful in illustrating the works and ways of God. This fair earth is recognised to be a mighty parable—a glorious Shechinah. Its manifold forms and hues are the outer folds, the waving skirts and fringes, of that garment of light in which the Invisible has robed His mysterious loveliness. There is not a leaf, nor a flower, nor a dewdrop, but bears His image, and reveals to us far deeper things of God than do final causes or evidences of design. The whole face of nature, to him who can read it aright, is covered with celestial types and hieroglyphics, marked, like the dial-plate of a watch, with significant intimations of the objects and processes of the world unseen. The Bible discloses all this to us. It not only gives us the knowledge of salvation, but reveals to us the spiritual source of the physical world; shows to us that the supernatural is not antagonistic to the constitution of nature, but is the eternal source of it. The miracles of the Bible are not only emblems of power in the spiritual world, but also exponents of the miracles of nature

—experiments, as it were, made by the Great Teacher in person, on a small scale and within a limited time, to illustrate to mankind the phenomena that are taking place over longer periods throughout the universe. All creation is a standing wonder; but it needs other wonders to reveal it to our careless eyes and insensible hearts. It needs the sudden multiplication of the loaves and fishes at Capernaum to explain to us the mystery of the harvest of the land and the sea. It needs the miracle of Cana to show to us who it is that is gradually converting water into wine in every vineyard. It needs the virtue flowing from the hem of Christ's garment at the touch of faith, to disclose to us the source and the meaning of the medicinal virtue stored up, for bodies blighted by the curse, in many a soothing anodyne, and many a healing balm. It needs the destruction of the walls of Jericho by the trumpet-blast to convince us that the seen is governed by the unseen—that the mountain must yield to the action of cold and heat—and the stable rock and massive castle, in the course of years, be weathered away and dismantled stone by stone by the subtle invisible forces of the air. It needs the calming of the stormy waters of Gennesaret to satisfy us that the powers of nature—which seem so arbitrary, so destructive, so purely physical—are held in leash by Him who maintains the constant beneficent circula-

tion of the elements. The philosophy of miracles is, therefore, just the revelation of the living God as the God of nature; the revelation of God, not as violating, but as maintaining the order of His world; a revelation sudden and startling, to show to us what could not be shown so effectually in any other way—what "His hand is daily doing for the beautifying and glorifying of the earth and of life." As Mr. Westcott says in his thoughtful work on Miracles, "The order of the universe has a spiritual root. The purpose of love which changes is also the purpose of love which directs it. He who can bind and loose the forces of nature has thus revealed the eternal purpose in which they originate."

As the *miracles* thus teach us the significance of the *forces* of the universe, so the *parables* teach us the meaning of the *forms* of creation. The one may be regarded as experiments in sacred natural philosophy; the other as lessons in sacred natural science. The one "strikes again the key-note of the world's order, and tunes again the concords of the lower spheres;" the other joins again, in a Divine harmonious union, what man has put asunder, and shows that these twain—the natural and the supernatural—are one. The parables of Jesus are not, as some suppose, mere arbitrary illustrations of nature, but actual translations, literal interpretations, of nature's own language. In them He does not give us ideas new and fresh from heaven; but expounds

and enables us to understand the old ideas which nature has been endeavouring, in her own dumb inarticulate language of signs, to teach us since she was created. Just as in His literal discourses Jesus rather expounded the Word than added to it, rather elucidated former prophecies than uttered new ones; so in the parables He rather removes the veil from the material universe, than gives us a new revelation—rather enables us to apprehend old symbols, than supplies us with new ones. He could say in regard to His explanations of both the Bible and nature—"My doctrine is not Mine, but His that sent Me." He shed light upon nature, as He shed light upon the Bible—upon the works as upon the Word of God; and proved that every natural fact is a symbol of some spiritual fact; that every object of creation is suggestive of some important moral truth.

In the incarnation of the Son of God we have the connecting link between the seen and the unseen; the ladder set upon earth whose top reaches to heaven. St. John represents Emanuel as seated on the throne *in the midst of the four cherubim* or living creatures —full of eyes before and behind. These are the symbols of creation present in the holy place on earth, and in the holiest of all—in heaven; and the eyes before and behind look forward and look back to Him as types of the Great Antitype, to whom all nature had a reference, from the first atom that appeared in the mineral kingdom up through all the

stages of organization and life to man. Every object in nature speaks of Him. The mineral kingdom reveals His stability, for "He is the Rock of our salvation"—the Foundation of our hope; the vegetable kingdom exhibits His beauty, for "He is the Rose of Sharon, and the Lily of the valley;" the animal kingdom shadows forth His strength and self-sacrificing innocence, for "He is the Lion of the tribe of Judah, and the Lamb of God which taketh away the sin of the world." The sun declares His glory, for "He is the Sun of righteousness;" the stars proclaim His effulgence, for "He is the bright and the morning Star." All the objects of nature have but a symbolical or concealed meaning; they are, in the words of St. Paul, *σκιὰ τῶν μελλόντων ἀγαθῶν*—a shadow of good things to come—while the *σῶμα*, the body, is of Christ. He is the *very* (verus) or *true* (*ὁ ἀληθινός*) Bread; He is the *very* or *true* Vine; He is the *very* or *true* Light which lighteth every man that cometh into the world. The vine, the bread, the light, as we are familiar with them in daily life, are but subordinate realizations, partial and imperfect anticipations, of the "*truth* that came by Jesus Christ." These are imperfect types; He is the perfect reality: these are shadowy outlines; He is the substance and the body. He realizes in the deepest, fullest, widest sense all that the vine, and the bread, and the light imply. He is their highest *ideal*—their *truth* in its highest form, in its ripest and completest develop-

ment. The utilitarian purposes which bread, and light, and the vine perform are thus secondary and subordinate to their spiritual purposes; or rather their uses in the economy of nature and man help to complete their typical significance, as emblems of Him who came not to be ministered unto but to minister, and to give His life a ransom for many. The grand idea of all creation is, therefore, the glorifying of the Son of God and the Son of man, by whom creation came into existence. "All things are gathered together in one in Christ; both those which are in the heavens, and those which are on the earth, even in Him." All things are but uttering one prophecy; all are but one grand united type of Him who is the brightness of the Father's glory, and the express image of His person, and yet the firstborn of every creature, for He is *before all things*, and in *Him all things* consist; for in Him "creation and the Creator meet in reality and not in semblance;" and in Him all the fulness of the Godhead and the fulness of creation dwell bodily.*

Such, then, is the meaning of Nature as revealed by Christ. Science has done much in these days to convince us of the reality of an unseen and eternal world. Its various discoveries are so many stepping-stones, as it were, from the visible to the invisible. The Bible precept which commands us to "look not at the things that are seen, but at the things that are

* See Dr. Balfour's admirable "Typical Character of Nature."

not seen; for the things that are seen are temporal, but the things that are not seen are eternal,"—a precept which, from its very familiarity, has lost much of the power of truth,—is confirmed by the abundant evidence and the striking illustrations of modern science. The discovery that our forests, cornfields, and coal-beds are the solid precipitations of unseen carbonic acid gas in the atmosphere; that the work of the world is carried on by the unseen force of steam, and the messages of the world delivered by the fleet-footed but invisible Mercury of electricity; that our bodies are the visible tabernacles of unseen elements, continually going and coming in the waste and repair of our tissues; that the "everlasting" mountains "change their shapes, and flow from form to form," being the mere ephemeral embodiments of forces and substances which circulate in an unseen state throughout the world; that in the very light which makes all things visible there is an invisible soul, as it were—a colourless ray—most powerful in its effects, and yet, strange to say, only to be detected by the sense of touch;—the discovery of all these things is surely a most striking proof of the truth of the lesson conveyed by the Bible on almost every page: that the objects of faith are the only realities; that the unseen is the true; that "the essence and meaning of all things are hidden from our natural sight." The revelations of the microscope at the one extreme of life's chain, and the revelations of the telescope at the other, by

immeasurably extending the realms of the invisible, add their own wonderful emphasis to the Scripture injunction, to seek behind and beyond the visible and the tangible the secret of our being—its true aim and end; to walk by that faith which is the substance of things hoped for, and the evidence of things not seen; and to endure as seeing Him who is the invisible. So, too, poets and artists teach us by their beautiful idealizations that the objects around us are not mere objects of sense, but are impressed with a spiritual glory and life. Poetry anoints our blind eyes with its own wonder-working eye-salve, and shows us "men, as trees walking;" shows us the beautiful Daphne, transformed in the fragrant Mezereon of spring, and the vain Narcissus in the graceful lily that bends admiringly to see its own fair form in the stream; shows to us the Hamadryad in the birch-tree, combing its perfumed tresses with milk-white hands; and the Naiad, laughing in the sparkle and murmur of the blue-eyed fountain; and in everything something superior to itself and akin to our own nature—something to love as well as to admire. It brings back to our material age the "fair humanities of old religion;" teaches us that the mythologies of Greece and Rome were the distorted shadows of something purer than themselves —that they demonstrated the existence of a spiritual world which is not a falsehood, but a solemn and enduring reality. And by thus connecting the objects

and scenes of our daily life with that invisible world of which our spirits are the inhabitants even now. Poetry gives us that partial enlightenment, which it needs the miraculous touch of Christ's own hand to complete, enabling us in His light to see light clearly. So, too, agriculture, though the most material of all our pursuits, is teaching us truths beyond its own direct province. The drained morass, the reclaimed waste, the conversion of the thorny wilderness into the fertile meadow or the golden cornfield, speak of God's husbandry in the sphere of soul. The sources of security that are multiplying every day against famine, in the varieties of climate, soil, and altitude that are being cultivated all over the globe, and whose produce is widely disseminated by trade and commerce, are not only materially useful, but have also a spiritual design in preparing the way of the Lord upon the earth. "Then shall the earth yield her increase; and God, even our own God, shall bless us. God shall bless us, and all the ends of the earth shall fear Him." In short, everything preaches to us, and convinces us, that the more our eyes are spiritually opened, the more clearly shall we discern in all things the tokens of a glory which is not all of earth. In every sunset we shall see the vision of the New Jerusalem coming down from God out of heaven, prepared as a bride adorned for her husband; its jewelled walls and golden streets shining in the marvellous shapes and far-stretching vistas of the radiant

clouds; and its light—like unto a stone most precious, even like a jasper stone, clear as crystal—in that pure, unsullied gleam that lingers on the western hills when all the sky has grown cold, and all the earth dark and dumb, and that seems like an opening in the narrow rim of our horizon into infinity. In every spring we shall have a mysterious foreshadowing of the resurrection of the body, and the life everlasting. Its bursting buds and quickening roots will speak of the awakening after death; and the unspeakable yearnings—the thoughts too deep for tears—all the sadness of the past, that come to us in the long ethereal gloaming, when the spring-day is lingering with half-closed eyes amid its new-found treasures, loth to leave them, will be like the flutterings of the spirit's wings within us, anxious, yet unwilling, to flee away to its true home and be at rest.

In the following chapters I have endeavoured to show that the teaching of nature and the teaching of the Bible are directed to the same great end; that the Bible contains the spiritual truths which are necessary to make us wise unto salvation, and the objects and scenes of nature are the pictures by which these truths are illustrated. I have here only plucked a few stray ears from a rich and golden field of promise; brought back only a few clusters to show the abundance of the land. I present them in this form in the hope that others may be in-

duced to study a department of knowledge which is calculated to yield much true enjoyment, to refine and purify the nature, and to exalt our conception of God, as revealed both in His Word and works.

I may observe that the lessons of nature in this volume have been gathered at random in different fields of natural science. There is no apparent unity or coherence between the chapters. This arises from the fact that they were originally written at intervals, and without any intention of publishing them in a collected form. Though the subjects treated, however, are diverse, the object and design of them all are the same. In this humble temple, made with feeble hands, doth every one speak of His glory. And this circumstance will, I trust, give the various papers that artistic, if not organic, unity and congruity which, as a mere collection of miscellanies, they would lack.

The book may be said to be divided into two parts; the first more distinctively *objective:* the second more distinctively *subjective.* In the first section the objects of nature are described for the sake of their own beauty and wonder, and for the evidences of Divine wisdom, power, and love which they display. In the second section they are viewed entirely in their typical aspect. The first eight chapters describe, as it were, the exterior appearance of nature's temple—the gorgeous, many-coloured curtain hanging before the shrine. The last seven

chapters bring us into the interior—the holy place, where is seen the very core of symbolical ordinances, and the mercy-seat is put above, upon the ark, and in the ark is the testimony that God hath given. Let me hope that the porch and the adytum to which it leads will be found to be homologous, both alike declaring the workmanship and the glory of the Great Architect of heaven and earth.

The texts prefixed to the chapters are but a few specimens of many unfamiliar Bible-words that are full of suggestive thought. They are not treated in the form of textual expositions, but in the form of illustrative meditations; and this mode of treatment warrants a greater exercise of fancy and a freer use of the law of association than would be proper in pure sermons. Texts such as have been thus selected from the inexhaustible mine of truth remind us of those singular formations which often occur in rocks, called *Drusic Cavities*. You pick up a rough, ordinary-looking stone, of a somewhat round shape; there is nothing specially attractive or interesting about it. You split it open with a hammer, and what a marvellous sight is displayed! The common-place boulder is a hollow sphere, lined with the most beautiful crystals, amethysts purple with a dawn that never was on land or sea. And so it is with many a familiar Bible text, when we examine it prayerfully and diligently. Its interior aspect, when broken up by study and experience, is widely different from the

appearance which it presents outside to the careless, superficial reader. May we so *prove* God's Word by prayer and meditation, and holy living; that it may be to us that wisdom which cannot be valued with the gold of Ophir, with the precious onyx, or the sapphire; whose price is above rubies! And may we so study God's works in the light of that Word, that they may be to us not "as is a landscape to a dead man's eye"—seeing, and yet not perceiving, hearing, and yet not understanding—but delightfully suggestive of the Unseen and Eternal in the heavens!

"How best unfold
The secrets of another world, perhaps
Not lawful to reveal? Yet for thy good
This is dispensed; and what surmounts the reach
Of human sense I shall delineate so,
By likening spiritual to corporeal forms,
As may express them best; though what if earth
Be but the shadow of heaven, and things therein
Each to other like, more than on earth is thought?"

H. M.

February, 1867.

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BIBLE TEACHINGS IN NATURE.

CHAPTER I.

PLEIADES AND ORION.

"*Canst thou bind the sweet influences of Pleiades, or loose the bands of Orion?*"—JOB xxxviii. 31.

IT is impossible for those who have never visited the glowing East to form an adequate idea of the exceeding beauty of an Oriental night. The sky—which bends enamoured over clusters of graceful palm-trees fringing some slow-moving stream, or groves of dark motionless cypresses rising up like Gothic spires from the midst of white flat-roofed villages—is of the deepest, darkest purple, unstained by the faintest film of vapour, undimmed by a single fleecy cloud. It is the very image of purity and peace, idealizing the dull earth with its beauty, elevating sense into the sphere of soul, and suggesting thoughts and yearnings too tender and ethereal to be invested with human language. Through its transparent depths the eye wanders dreamily upwards until it loses itself on the threshold of other worlds. Over the dark mountain ranges, the lonely moon walks in brightness, clothing the landscape with the pale glories of a mimic day; while the zodiacal light, far more distinct and vivid than it is ever seen in this country, diffuses a mild

pyramidal radiance above the horizon, like the afterglow of sunset. Constellations, tremulous with excess of brightness, sparkle in the heavens, associated with classical myths and legends which are a mental inheritance to every educated man from his earliest years. There the ship Argo sails over the trackless upper ocean in search of the golden fleece of Colchis; there Perseus, returning from the conquest of the Gorgons, holds in his hand the terrible head of Medusa; there the virgin Andromeda, chained naked to the rock, awaits in agony the approach of the devouring monster; there the luxuriant yellow hair of Berenice hangs suspended as a votive offering to Venus; while the dim misty track formed by the milk that dropped from Juno's breast, and which, as it fell upon the earth, changed the lilies from purple to a snowy whiteness, extends across the heavens, like the ghost of a rainbow. Conspicuous among them all, far up towards the zenith, old Orion, with his blazing belt, meets the admiring eye, suggestive of gentle memories and kind thoughts of home; while immediately beyond it is seen the familiar cluster of the Pleiades, or Seven Stars, glittering and quivering with radiance in the amethystine ether, like a breastplate of jewels—the Urim and Thummim of the Eternal.

We can imagine the patriarch Job gazing on this magnificent spectacle at midnight from some lonely spot on the plains of Chaldea.* Sorrow has banished

* The locality of Uz is uncertain. Spanheim, Rosenmüller, and other eminent authorities place it in the region of the Euphrates; and I am inclined to adopt their decision.

sleep from his eyes; doubt and despondency, arising from the seeming inconsistencies of Providence, have driven him forth from his dwelling to seek the calm solace of Nature. He feels himself enclosed as it were in a blind glen, from which no way of escape appears, surrounded on every side by dark frowning mountains of mystery, with no golden gleam of hope in the western horizon; and, thus disquieted, he is tremulous like an aspen leaf to all the influences of the hour and scene. The night-wind moans in the acacia-trees beside him, and bathes his hot brow with its refreshing coolness. The Euphrates, mirror-like, glimmers far away, reflecting on its unquiet waters the steadfast stars, and filling the drowsy air with its monotonous murmurs. All around him stretch the boundless Mesopotamian plains, clothed with the strangest lights and shadows from the mystical moonlight. Suddenly his sad meditations are disturbed by an extraordinary appearance. The sky in the east becomes lurid and heavy; the moon loses its splendour, and assumes a violet colour; the stars disappear; the whole desert seems to move; clouds of sand, impelled by the fury of the deadly simoom, rush past. A voice issues from the bosom of the tempest, which thrills his soul with dread and awe. It is the voice of God. In gracious condescension, the Sovereign and Judge of the universe appears, to admonish the querulous mistrust and resolve the painful doubts of His servant. He passes His varied and wonderful works in review before the patriarch; and challenges him to answer His questions concerning the common appearances and processes of nature before attempting

to fathom the secrets of Providence, or object to the wisdom and goodness of its Upholder. From the mysteries of animal and vegetable life, from the phenomena of inorganic nature as displayed in this world, He directs Job's attention to the glorious page of heaven unfolded overhead—alive with clustering constellations, whose bright destinies move at an infinite altitude above the petty waves of time, and whose passionless purity and eternal peace seem to mock the fever of his soul. Often, perchance, while tending with his shepherds his numerous flocks on the plains where science was born, had he gazed on these magnificent orbs—watched their mysterious movements—their risings and settings, as they indicated on the great dial of heaven the hours of eternity, and lost himself in conjectures as to their nature, their distance, and their use. But never did he gaze upon them with such interest as now; for the Spirit of God has invested them with a new and profounder meaning. They become hieroglyphics of the moral as well as the physical world. They not only speak to him of the power and faithfulness of God, but they also show to him in a figure—enable him to see as in a glass darkly—the design and uses of affliction. They symbolize to him the great truth that, as the beams of the sun which reveal distinctly insect and leaf blind us to the countless orbs of heaven, so the daylight of prosperity, while it shows us clearly the trifling and perishing things of the earth, conceals from our view the glories of the spiritual and eternal world; and if light can thus obscure and deceive, why may not the night of trial and death which we

so much dread? They teach him silently, but eloquently and impressively, that in all the darknesses of the human sky, in sleep, in night, in sorrow, and in death, starry glimpses may be obtained of a Divine light and love so great that the darkness mercifully covers it in its fulness from weak mortal eyes. And thus, soothed into a better frame by the gracious teachings of the stars, the Divine question, "Canst thou bind the sweet influences of Pleiades, or loose the bands of Orion?" needs no answer. The patriarch has felt in his inmost soul the full power of the rebuke, "Be still, and know that I am God;" and now lies quiet and hushed like a weaned child in the Everlasting Arms.

The isolated group of the "Seven Stars," from the singularity of its appearance, has been distinguished and designated by an appropriate name from the earliest ages. The learned priests of Belus carefully observed its risings and settings nearly two thousand years before the Christian era. By the Greeks it was called Pleiades, from the word *pleein*, to sail, because it indicated the time when the sailor might hope to undertake a voyage with safety; it was also called Vergiliæ, from *ver*, the spring, because it ushered in the mild vernal weather favourable to farming and pastoral employments. The Greek poets associated it with that beautiful mythology which, in its purest form, peopled the air, the woods, and the waters with imaginary beings, and made the sky itself a concave mirror, from which came back exaggerated ideal reflections of humanity. The Seven Stars were supposed to be the seven daughters of Atlas, by Pleione—one of the

Oceanides—placed in the heavens after death. Their names are Alcyone, Merope, Maia, Electra, Taygeta, Sterope, and Celeno. They were all united to the immortal gods, with the exception of Merope, who married Sisyphus, king of Corinth, and whose star, therefore, is dim and obscure among her sisters. The "lost Pleiad," the "sorrowing Merope," has long been a favourite shadowy creation of the poetic dream.

But an interest deeper than any derived from mythical association or classical allusion, is connected with this group of stars by the use made of it in Scripture. I believe that in the apparently simple and passing allusion to it in Job, lies hid the germ of one of the greatest of physical truths—a germ lying dormant and concealed in the pages of Scripture for ages, but now brought into air and sunlight by the discoveries of science, and developing flowers and fruit of rare value and beauty. As an eminent Professor has well remarked: "There are glories in the Bible, on which the eye of man has not gazed sufficiently long to admire them; there are difficulties, the depth and inwardness of which require a measure of the same qualities in the interpreter himself. There are notes struck in places, which, like some discoveries of science, have sounded before their time, and only after many days been caught up, and found a response on the earth. There are germs of truth which, after thousands of years, have never yet taken root in the world." The question at the head of this paper contains a remarkable example of one of these far-reaching and anticipative truths. If our translators have correctly identified the group of stars to which they have given

the familiar name of Pleiades—and we have every reason to confide in their fidelity—we have a striking proof here afforded to us of the perfect harmony that exists between the revelations of science and those of the Bible—the one illustrating and confirming the other. We know not what progress the Chaldeans may have made in astronomical discovery at this early period; but it is not at all likely that the great truth in question was known to Job—unless, indeed, specially revealed to him, in order to enlarge his apprehensions of the wisdom and power of the Creator. So far as he was concerned, the question, "Canst thou bind the sweet influences of Pleiades?" might have referred solely to what was then the common belief—viz. that the genial weather of spring was somehow caused by the peculiar position of the Pleiades in the sky at that season; as if God had simply said, "Canst thou hinder or retard the spring?" It remained for modern science to make a grander and wider application of it, and to show in this, as in other instances, that the Bible is so framed as to expand its horizon with the march of discovery—that the requisite stability of a moral rule is, in it, most admirably combined with the capability of movement and progress. If we examine the text in the original, we find that the Chaldaic word translated in our version Pleiades is *Chimah*, meaning literally a hinge, pivot, or axle, which turns round and moves other bodies along with it. Now, strange to say, the group of stars thus characterised has recently been ascertained, by a series of independent calculations—in utter ignorance of the meaning of the text—to be actually the hinge

or axle round which the solar system revolves. It was long known as one of the most elementary truths of astronomy, that the earth and the planets revolve around the sun; but the question recently began to be raised among astronomers, "Does the sun stand still, or does it move round some other object in space, carrying its train of planets and their satellites along with it in its orbit?" Attention being thus specially directed to this subject, it was soon found that the sun had an appreciable motion, which tended in the direction of a lily-shaped group of small stars, called the constellation of Hercules. Towards this constellation, the stars seem to be opening out; while at the opposite point of the sky their mutual distances are apparently diminishing—as if they were drifting away, like the foaming wake of a ship, from the sun's course.

When this great physical truth was established beyond the possibility of doubt, the next subject of investigation was the point, or centre round which the sun performed this marvellous revolution; and after a series of elaborate observations and most ingenious calculations, this intricate problem was also satisfactorily solved—one of the greatest triumphs of human genius. M. Mädler, of Dorpat, found that Alcyone, the brightest star of the Pleiades, is the centre of gravity of our vast solar system—the luminous *hinge* in the heavens round which our sun and his attendant planets are moving through space. The very complexity and isolation of the system of the Pleiades, exhibiting seven distinct orbs closely compressed to the naked eye, but nine or ten times that number

when seen through a telescope — forming a grand cluster, whose individuals are united to each other more closely than to the general mass of stars—indicate the amazing attractive energy that must be concentrated in that spot. Vast as is the distance which separates our sun from this central group—a distance thirty-four millions of times greater than the distance between the sun and our earth—yet so tremendous is the force exerted by Alcyone, that it draws our system irresistibly around it at the rate of 422,000 miles a day, in an orbit which it will take many thousands of years to complete. With this new explanation, how remarkably striking and appropriate does the original word, for Pleiades appear! What a lofty significance does the question of the Almighty receive from this interpretation! "Canst thou bind the sweet influences of Pleiades?" Canst thou arrest, or in any degree modify, that attractive influence which it exerts upon our sun and all its planetary worlds, whirling them round its pivot in an orbit of such inconceivable dimensions, and with a velocity so utterly bewildering? Silence the most profound can be the only answer to such a question. Man can but stand afar off, and in awful astonishment and profound humility exclaim with the Psalmist: "O Lord my God, Thou art very great!"

In accordance with this higher interpretation, the influences of the Pleiades may be called *sweet*, as indicating the harmonious operation of those great laws by which our system revolves around them. In this vast and complex arrangement, not one wheel jars or creaks—not a single discordant sound disturbs

the deep, solemn quietude of the midnight sky. Smoothly and silently each star performs its sublime revolutions. Although our system is composed of so many bodies—differing in size, form, and consistence—they are all exquisitely poised in space in relation to one another, and to their common centre; their antagonistic forces are so nicely adjusted as to curb every orb in its destined path, and to preserve the safety and harmony of the whole. Moons revolve around planets, comets and planets around the sun, the sun around Alcyone, and Alcyone around some other unknown sun, hid far away in some unexplored depths of our galaxy; and grand beyond conception, this cluster of systems around the centre of ten thousand centres—the great white throne of the Eternal and the Infinite; and all with a rhythm so perfect, that we might almost believe in the old poetic fable of "The Music of the Spheres." What vast and almost infinite consequences depend upon that little star, that gleams out upon us from the midnight sky, among a cluster of diamond points, itself scarcely larger than a drop of lucent dew! What profound interest gathers around it! It is a blessed thought that it is not a capricious, changeable Being who holds the helm of our universe, but the just and merciful Jehovah—"the same yesterday, to-day, and for ever"—the Father who pitieth His children, knowing the frailty of their frames. In this vision of orbits and revolutions, more awful and stupendous than Ezekiel's vision of wheels within wheels, we see seated on the throne above the firmament, not a blind chance or a passionless fate, but one like unto the

Son of Man—He whom John saw in Patmos, holding the mystery of the seven stars in His right hand—possessed of infinite love as well as infinite power—binding the sweet influences of Pleiades solely for the order and good of His creation.

Man's lifetime is a mere moment; nay, the past history of our race, with all its great and varied events, is but a handbreadth compared with the orbit of our solar system. During the period of our existence on the earth, we have traversed thousands of millions of miles; and yet all that time we have obtained no new view of the heavens. All things have continued as they were; the same stars and constellations, in nearly the same positions in the sky, gleam down upon us which appeared to the shepherds on the midnight plains of Chaldea in the time of Job. So vast is the orbit of our system, that from the creation of man to the present day, we have described but an infinitesimal arc of it. Our annual progress, though expressed by a hundred and fifty millions of miles, would appear, if viewed from the nearest fixed star, as little more than one-third of a second of space. We know not how long our race may exist in this world; but if it be destined to outlive the completion of this vast course, strange and unimagined glories will be revealed to future generations. The heavens of our time will wax old and disappear; constellations with which we are now familiar will give place to unknown combinations; and ever as our system rolls on through space it will pass into new collocations; new suns and systems will advance, open out their splendours, and fill the sky with their

glory, and then recede: so that, as time advances, the human race, in the retrospect of this vast aërial journey, will have a higher conception than is now possible, of the boundless domains and the inexhaustible riches of the Infinite God.

Having described the Pleiades, let us now turn to the beautiful antithesis of the text,—"Canst thou loose the bands of Orion?" This cluster of stars—the *Kesil* of the ancient Chaldeans—is by far the most magnificent constellation in the heavens. Its form must be familiar to every one who has attentively considered the nocturnal sky. It resembles the rude outline of a gigantic human figure. By the Greek mythologists, Orion was supposed to be a celebrated hunter, superior to the rest of mankind in strength and stature, whose mighty deeds entitled him after death to the honours of an apotheosis. The Orientals imagined him to be a huge giant who, Titan-like, had warred against God, and was therefore bound in chains to the firmament of heaven; and some authors have conjectured that this notion is the origin of the history of Nimrod, who, according to Jewish tradition, instigated the descendants of Noah to build the Tower of Babel. The constellation of Orion is composed of four very bright stars, forming a quadrilateral, higher than it is broad, with three equidistant stars in a diagonal line in the middle. The two upper stars, called Betelgeux and Bellatrix, form the shoulders; in the middle, immediately above these, are three small, dim stars, close to each other, forming the cheek or head. These stars are distinctly visible only on a very clear night; and this circumstance may have given rise to the old fable

that Œnopion, king of Chios—whose daughter Orion demanded in marriage—put out his eyes as he lay asleep on the sea-shore, and that he recovered his sight, by gazing upon the rising sun from the summit of a neighbouring hill. The constellation is therefore represented by the poets, as groping with blinded eyes all round the heavens in search of the sun. The feet are composed of two very bright stars, called Rigel and Saiph; the three stars in the middle are called the belt or girdle, and from them depends a stripe of smaller stars, forming the hunter's sword. The whole constellation, containing seventeen stars to the naked eye, but exhibiting seventy-eight in an ordinary telescope, occupies a large and conspicuous position in the southern heavens, below the Pleiades; and is often visible, owing to the brightness and magnitude of its stars, when all other constellations, with the exception of the Plough, are lost in the mistiness of night. In this country it is seen only a short space above the horizon, along whose rugged outline of dark hills its starry feet may be observed for many nights in the winter, walking in solitary grandeur. It attains its greatest elevation in January and February, and disappears altogether during the summer and autumn months. In Mesopotamia it occupies a position nearer the zenith, and therefore is more brilliant and striking in appearance. Night after night it sheds down its rays with mystical splendour over the lonely solitudes through which the Euphrates flows, and where the tents of the patriarch of Uz once stood.

Orion is not only the most striking and splendid

constellation in the heavens; it is also one of the very few clusters that are visible in all parts of the habitable world. The equator passes through the middle of it; the glittering stars of its belt being strung, like diamonds, on its invisible line. In the beginning of January, when it is about the meridian, we obtain the grandest display of stars which the sidereal heavens in this country can exhibit. The ubiquity of this constellation, may have been one of the reasons why it was chosen to illustrate God's argument with Job, in a book intended to be read universally, wherever the human race should extend. When the Bible reader of every clime and country can go out in the appropriate season, and find in his own sky the very constellation, and direct his gaze to the very peculiarity in it, to which the Creator alluded in His mysterious converse with Job, he has no longer a vague, indefinite idea in his mind, but is powerfully convinced of the reality of the whole circumstance, while his feelings of devotion are deepened and intensified.

The three bright stars which constitute the girdle or *bands* of Orion never change their form: they preserve the same relative position to each other, and to the rest of the constellation, from year to year, and age to age. They present precisely the same appearance to us which they did to Job. No sooner does the constellation rise above the horizon, however long may have been the interval since we last beheld it, than these three stars appear in the old familiar position. They afford to us one of the highest types of immutability in the midst of ceaseless changes.

When heart-sick and weary of the continual alterations we observe in this world, on whose most enduring objects and affections is written the melancholy doom, "passing away," it is comforting to look up to this bright beacon in the heavens, that remains unmoved amid all the restless surges of time's great ocean. And yet in the profound rest of these stars there is a ceaseless motion; in their apparent stability and everlasting endurance there is constant change. In vast courses, with inconceivable velocities, they are whirling round invisible centres, and ever shifting their positions in space, and ever passing into new collocations. They appear to us motionless and changeless, because of our great distance from them; just as the foaming torrent that rushes down the hillside with the speed of an arrow, and in the wildest and most vagrant course, filling all the air with its ceaseless shoutings, appears from an opposite hill frozen by the distance into silence and rest—a mere motionless, changeless glacier on the mountain side. Mysterious triplet of stars, that are ever changing, and yet never seeming to change! How wonderful must be the Power which preserves such perfect order amid all their complex arrangements, such sublime peace and everlasting permanence amid the incalculable distances to which they wander, and the bewildering velocities with which they move! What answer can Job give to the question of the Almighty? Can man whose breath is in his nostrils, and who is crushed before the moth, unclasp that brilliant starry bracelet which God's own hand has fastened on the dusky arm of night? Can man

separate these stars from one another, or alter their relative positions in the smallest degree? What is it that controls all their movements, and keeps them united together in their peculiar form? It is the force of gravitation, which is not a mere mechanical agency, unoriginated and uncontrolled, but the delegated power of the Almighty—the will of Him who has the keys of the universe, and "shutteth, and no man openeth: and openeth, and no man shutteth." How sublime the thought, that the same Power which binds the starry bands of Orion, keeps together the particles of the common stone by the wayside,—that those mighty masses are controlled by the same Almighty influence, which regulates the falling of the snow-flake and the gentle breath of summer, that directs the motions of the minutest animalcule, and weaves the attenuated line of the gossamer!

If we look with the naked eye at the star Rigel, which forms the right foot of the constellation, we observe nothing remarkable about it, except its beauty and brightness, for it is a star of the first magnitude. If we apply a good telescope to it, however, we find that it is a *double star*. This is merely one example of a binary arrangement which prevails to a great extent throughout the heavens, upwards of 6,000 double stars having their positions measured and laid down in our catalogues. These binary stars revolve round each other, or round a common centre; and thus exhibit to us, in the depths of the heavens, the extraordinary spectacle, not of planet revolving round sun, as we are accustomed to in our solar system, but of sun moving round sun. The striking thought is thus

brought home to us, that the tiny ray that comes to us at twilight from some timid twinkling orb, almost fainting in the pale blue sky, is in reality a miniature sunbeam; and the feeble pearly glimmer of starlight, which covers the midnight heavens as if with a transparent veil, is the daylight of other worlds, and is woven of the scattered glory of thousands of suns. Strange to say, the double and multiple stars shine with differently-coloured light. All the tints of the rainbow have been found in them; so that sidereal chromatics have become a distinct branch of study. A double star in the constellation of the Whale, is composed of a fine orange-coloured primary and a blue companion. A triple star in Andromeda is formed of one red and two emerald-green stars. Some stars are scarlet, others intensely blood-red, others golden yellow, and others brilliantly blue. In some cases, however, the colours are variable, having undergone a complete change since they were first observed: Sirius, for instance, is described by the ancient astronomers as a red star; whereas now it is brilliantly white. It does not always require the aid of the telescope to distinguish the colours of stars. Some of them are distinctly visible to the naked eye. The beautiful star called Betelgeux, forming the left shoulder of Orion, is of a bright red colour; so also are Aldebaran and Arcturus. Capella and Procyon are yellow, and Castor green. Smaller stars do not exhibit this peculiarity in so striking a manner; but the application of the most ordinary telescope reveals it immediately. Through the clear transparent atmosphere of a Syrian night, without any optical aid whatever,

one star is seen to shine like an emerald, another like a ruby, a third like a sapphire, and a fourth like a topaz,—the whole nocturnal heavens appearing to sparkle with a blaze of jewels. How strange and inconceivable to us, must be the appearance presented by these double and parti-coloured suns, shining simultaneously in the sky. "It may be easier suggested in words," says Sir John Herschel, "than conceived in imagination, what a variety of illumination two stars, a red and a green, or a yellow and blue one, must afford a planet circulating round either; and what cheering contrasts and grateful vicissitudes a red and green day, for instance, alternating with a white one and darkness, must arise from the presence or absence of one or other or both from the horizon!"

The cause of the different colours of the stars, and of the changes which they undergo, is not yet satisfactorily explained. Some attribute it to differences in the chemical qualities of the meteoric fuel consumed in these orbs; others to the differences in the velocities with which they revolve round each other, causing differences in those undulations of light which are constituent of colours. "It must be left to time and careful observation," says Arago, "to teach us if the green or blue stars are not suns in process of decay, if the different tints of these bodies do not indicate that combustion is operating upon them at different degrees." The spectroscope, in the hands of Huggens and others, has recently made the most astonishing discoveries. Dr. Miller, by placing a prism within the tube of a refracting telescope, has analysed the light of Sirius, Capella, and Aldebaran; and although

the light experimented on left one of the stars twenty, and another sixty years ago, it was still so powerful as to produce a photograph of its own spectrum. When spectrum-analysis is therefore more perfect and better understood, we shall be furnished, in all likelihood, with the most accurate information regarding the chemical substances which enter into the composition of even the remotest stars and nebulæ, and have the problem of their colours and changes satisfactorily solved. In the meantime, it is extremely interesting to observe the same variety and harmony of colour prevailing on a stupendous scale, among the orbs of heaven, as among the coloured petals of the lowliest wayside-flower; both, though separated so widely from each other by size, distance, and importance, belonging to one grand system, all whose parts are perfect; the rainbow-flowers of the footstool, as well as the starry flowers of the throne, proclaiming them to be the work of one all-wise and all-powerful Artist.

There is one object of surpassing interest connected with the constellation of Orion, to which I must briefly refer in conclusion. On examining the middle star in the sword, on a clear frosty night, it appears, even to the naked eye, invested with a kind of haze or indefiniteness not usually observed about stars of similar magnitude. The application of the smallest telescope reveals at once the cause, and shows instead of a single star, four bright stars along with numerous smaller ones, with a background of diffused misty light. We are gazing on the far-famed nebula of Orion, the most stupendous and magnificent object

in the heavens. By that faintly luminous speck we are brought to the very outskirts of creation, to the remotest point which human vision has been able to reach amid the awful profundities of space. Though visible to the naked eye, and connected with one of our nearest constellations, it lies immeasurably far off. For a long time the most powerful instruments of the astronomer, anxiously directed to this celestial hieroglyph under the most favourable conditions for observation, and even in Southern climes, where the skies are incomparably clearer than ours, could not decipher its real character. It assumed, with higher optical powers, an appearance of greater magnificence; its light became far more brilliant, and its form expanded into gigantic proportions, but still it showed not the faintest trace of stellar constitution; it became only the more mysterious and indescribable. Fantastic arms of silvery light—streamers of luminous mist, branching inextricably away—thinning off into the most delicate gossamer films, and finally fading into darkness almost imperceptibly; "isolated patches of more vivid brilliancy, lying as it were on the shore of night, with huge caverns of absolute blackness and emptiness dug out through the phosphorescent mass:" these were the strange features which this splendid shield of sky-blazonry presented to the finest telescopes of the past day. The Isis hidden behind the mysterious web could not be unveiled. It provoked a profound curiosity which it refused to gratify. So unaccountable did it seem—so utterly unlike any other object in the heavens—so different from all that had hitherto been known of collections of stars—

that some of the most eminent astronomers did not hesitate to assert, that it was merely an accumulation of self-shining nebulous fluid, akin to the cometic, or matter in an extreme state of rarefaction. Here, they imagined, they were conducted to the very source of matter, existing at first in a gaseous diffused condition in space, gradually concentrating and becoming solid, until at last stars and worlds were produced capable of supporting organic life. This, they thought, geological testimony warranted them in supposing was the history of our own earth's construction; and if so, why might not other bodies of the solar and stellar systems be even now going through a series of similar changes? The nebula of Orion might be the primary germ-substance of new worlds, gradually shaping themselves from the thin formless matter around them, and developing themselves by virtue of some unknown law of nature.

This hypothesis is not in itself necessarily atheistical; for the world might as well have been formed by God in this way as in any other. Indeed I am free to confess that, could such a theory be established, it would tend to exalt, instead of lowering, my ideas of God as a God of order, and of the creation as a gradually developed and slowly unfolded artistic production. But when employed to dissociate the Creator from His creation, and to prove the spontaneity or eternity of matter, the nebular hypothesis then becomes atheistical: and, unfortunately, it has been too often used in this way. Some infidels tried to make the most of it, but it did not answer the object they had in view. It might trace back the mass to an anterior state,

"which," as Laplace says, "was itself preceded by other states in which the nebulous matter was more and more diffuse, and in this manner we arrive at a nebulosity so diffuse that its existence could scarcely be suspected;" but even here the question would arise, "Whence came that primitive state of matter?" Carry our speculations as far back as we may, we shall only arrive at proximate beginnings of previous conditions—the idea of a primary beginning being still beyond our conception. The truth is, that all our scientific investigations will never conduct us to the ultimatum—the commencement of matter. As a recent writer admirably says, "Even if permitted to gaze on the primordial elements of things, science of itself could not be certain of the fact. If, while the astronomer was searching the depths of space with his instrument, a nebulous body was to be strictly originated under his gaze, his science could not assure him that the body had not come wandering thither from some distant quarter, where it had existed under other conditions. The fact that it must some time have had a beginning, might be instinctively felt by him as a truth of reason, but in the nature of things the fact could be made known to him only as an authoritative announcement, and that announcement could come to him only from another and a higher source—from the Divine Originator Himself." All that we look for at the hands of science is to admit the analogical evidence, which geology affords of a real and true beginning; and to satisfy the intellectual necessity, the imperative requirements of reason, by admitting that such a

commencement there must have been, preparatory to the due reception of the sublime affirmation of inspiration—"In the beginning God created the heavens and the earth."

When the magnificent telescope of Lord Rosse was directed to the nebula of Orion, in circumstances favourable for the employment of its highest powers, the luminous haze became resolved into myriads of sparkling particles, small as the point of a needle, and close as the grains of a handful of sand. The conclusion was therefore eagerly adopted, that it was not matter in an extreme state of diffusion and rarefaction, but a vast assemblage—a very blaze of stars—clusters upon clusters—systems upon systems; the molecules double stars; the ultimate particles, suns with planets perchance revolving around them. Here, it was thought, was a triumphant refutation of the arguments, drawn by some from this nebula, against the existence and providence of God, and the truth of the Mosaic cosmogony. So the matter rested until very recently; and now spectrum-analysis has again brought back the old opinion that the nebula of Orion is, after all, merely an enormous gaseous system, maintaining permanently its general form by reason of the continual movements of its denser portions, which appear under the telescope as luminous points. But whatever support it may thus give to the nebular hypothesis, it does not on that account, as I have said, come into antagonism with the first verse of Genesis, which ascribes the creation of the heavens and the earth—although it does not say how—to Jehovah God.

But though the nebulæ proper are probably mere accumulations of luminous gas, there are numerous other so-called nebulæ which have been resolved into clusters of stars. They present the strangest forms, many of them more fantastic than the clouds that float on a breezy summer sky, and so distant from each other that light must travel a thousand years before it can pass from one to another. Some of these clusters, lying on the very verge of infinity, baffle the curiosity of the astronomer, and continue mere films of light even in the telescope of Lord Rosse, or the Cambridge and Pulkova refractors; but analogy leads us to conclude that they are resolvable into stars, and appear as nebulæ only because of their great distance. All the countless stars that glitter singly in our heavens belong to the Milky Way; our solar system is one of its central stars; Arcturus, Orion, the Pleiades, and all the brilliant constellations which we see on a cloudless night, form its spangled interior; while the broad irregular zone of filmy light which girdles the heavens, called by the American Indians the "Road of Souls," the path of the good to Paradise, is its dim and distant outskirts. And this magnificent universe spreading immediately around us on every side, would probably appear, if viewed from the cluster of Andromeda, a mere filmy cloud, hardly distinguishable in the depths of the heavens. Many of the hazes that float in space are thus distinct universes—galaxies of suns and planets—worlds, perchance, peopled with life and intelligence like our own. Many so-called nebulæ are firmaments of stars, heavens

of constellations, rising tier above tier—stratum above stratum—vast beyond the utmost stretch of imagination; some so remote that the light by which we see them left them ages ago; nay, their dim illumination may be but the fitful glow of their gorgeous funeral pyre, shooting across the awful void, and informing us, though long lost, that they had fulfilled their destiny millions of years before Adam came into existence. We thus behold on the page of heaven,—inscribed in everlasting characters which we, however, cannot read,—the annals of the past eternity. The visible picture of all the successive events that have been transacted on our earth, is still travelling by means of light through the regions of space, and might be discovered in different stars placed at the requisite distances, by a being possessed of sufficient optical power. The Omniscient alone possesses this power; and before His eye is spread out, in star after star, the records of the universe. These are the books sealed to us with seven seals, held in His hand, open to His eye, which contain what we imagine has perished—which reveal what we imagine He has overlooked, in which every event of the universe of mind and matter is self-registered, and naked before Him with whom we have to do.

Who then can gaze upon Orion and the Pleiades without feelings of the deepest emotion? While many things connected with them baffle our curiosity, they increase our awe and reverence by immeasurably exalting our conception of the universe—by giving

a new and profound significance to the solemn appeal to man, which issued from the invisible shrine of the All-encompasser, — the All-sustainer — "Hast thou an arm like God? or canst thou thunder with a voice like Him?" "Canst thou bind the sweet influences of Pleiades, or loose the bands of Orion?"

CHAPTER II.

ICE-MORSELS.

"*He casteth forth His ice like morsels.*"—PSALM cxlvii. 17.

THERE are hours that form epochs in one's life—that pass not with the shadow upon the dial, but remain an inseparable part of the present. Such an hour I spent last autumn near the Couvercle on the side of Mont Blanc. After a most toilsome ascent from the Montanvert, over the yawning crevasses, the crumbling moraines, and the frowning precipices of the Mer de Glace, I came late in the afternoon to this elevated spot, more than 8,000 feet above the level of the sea. My intention was to reach the famous "Jardin," a rocky oasis rich in Alpine plants amid a wilderness of snow and ice—a relic of a long-forgotten summer left blooming on the lap of eternal winter; but excessive fatigue and the lateness of the hour prevented me from carrying out my object. I stopped short at this point, and before going back, I sat down on a piece of beautiful green sward to rest a little; while my guide went in search of crystals, and left me alone. Never shall I forget the terrible sublimity of the scene which then spread around me, and the thrilling emotions with which I

gazed upon it. I was in the very heart of the icy solitudes of the Alps, in the innermost shrine of one of nature's most stupendous temples; and my soul knelt, humbled and hushed in awe and reverence, before those majestic footstools of God that seemed to lead far up to the great white throne itself. Weak and cold are all words to picture such a memory. Behind me rose up thousands of feet into the clouds, like gigantic cathedral spires, those sharp, precipitous Aiguilles, which are perhaps the most unique and wonderful features in the scenery of Chamouni. In front of me were the vast precipices and serrated ridges of the Grandes Jorasses, and the perpendicular rocks of the Aiguille de Charmoz; every ledge and crevice that afforded the slightest resting-place flecked with snow; while through an opening between the peaks, the colossal shoulder and summit of Mont Blanc burst into view, like a vision of heaven, its majesty increasing as I gazed, until at last it filled soul and sight, and completely absorbed each awe-struck sense. A golden cloud rested above its highest point, like a diadem with which the setting sun had crowned it monarch of European mountains. The reflection of the rosy hues in the western heavens upon its stainless snow was exquisitely beautiful. It looked like an enormous, intensely illuminated crimson flower held up in nature's white fingers for the sun's dying blessing; while the sky overhead wore a soft violet hue, blending away towards the zenith, by the most delicate gradations, into zones of orange-red and primrose-yellow. The whole scene seemed an awful white realm of mystery and death, "placed far aloft in

a sphere above human interests and feelings;" and the sunset, instead of making it more familiar, imparted to it a weird wild splendour which scarcely seemed of earth.

But the feature that struck me most in the landscape was not stupendous precipices, or lofty spires of rock, or towering dome of everlasting snow, catching the radiance of ruby, topaz, and amethyst from the gates of heaven;—it was the glaciers, those silent, motionless cataracts "that heard a mighty voice and stopped at once amid their maddest play," which filled with their rigid ghastly masses every gorge around. There is no sight among the Alps so calculated to impress the mind; and even the most apathetic spectator cannot come into contact with them for the first time without emotions of the profoundest astonishment. Nowhere could a grander view of them be got than from the spot where I halted. No less than three great tributary glaciers—the *Glacier du Géant*, the *Glacier de Lechaud*, and the *Glacier du Talêfre*—came pouring down in the wildest and most tumultuous confusion, from so many ravines into the great central basin of the Mer de Glace. This accumulated mass of ice, about twelve miles long and from one to two wide, extended right before me, as far as my eye could reach, down towards the valley of Chamouni. Its surface was like that of a sea which had been suddenly frozen, not during the height of a storm, but when the billows had partially subsided; and these blunted waves, broken and disjointed in the roughest manner by transverse crevasses, ran parallel with the whole length of the glacier. In some places the ice was

black and discoloured with long lines of moraine matter; while in others it was pure and greenish white, like the hyaline pavement which John saw in vision stretching away into shining distance before the throne of God.

Along the brink close beside me there was a bright little garden of Alpine wild flowers. Clinging to the loose verdureless *débris* of the lateral moraine, nurtured by the cold drip of the melting ice, exposed to the combined effects of a scorching sun by day and the keenest frost at night, of the deepest calm and the wildest storm, and frequently snowed on and sunned in the same hour, these flowers were yet, strange to say, among the loveliest of nature's productions. Golden *geums* and *potentillas* gleamed like miniature suns; *gentians*, *veronicas*, *violets*, and *forget-me-nots*, formed an earthly firmament of deepest blue in which they shone; while *moss-campions* and *aretias* braided their soft clouds of richest crimson, imitating those aërial ones which at that moment were sailing in all their sunset glory overhead. These flowers, blooming on the very borders of the ice, eloquently spoke to me of the life and death, the joy and sorrow, the blight that destroys and the blessing that renews, which are so mysteriously blent on this earth of ours. On the one hand was Nature ruining her own creations; on the other hand she was restoring and beautifying them. The glacier was grinding down the mountains, and the Alpine flowers were healing the scars which it inflicted. The mercy and the judgment were here, as they ever are, if we could only see it, side by side.

How solemn was the stillness which brooded over

everything! A dread voice had gone forth, "Let all the earth keep silence," and the solitude was like the presence of God. My soul was burdened with "the power of the hills;" each sense was strained, by the sublimity around, to its utmost tension. And yet the glaciers were far from being mute and inanimate. Every ten minutes or so, the breathless pause of nature was broken by the muffled roar of a distant avalanche. Everything seemed on the point of moving, and waiting but a whisper from heaven. All that looked most solid and permanent, turned out to be most treacherous and unstable. The force of gravitation and the action of the sun caused the glaciers continually to crack and strain over their rocky beds; and huge stones and pinnacles of ice that seemed motionless and steadfast as the peaks overhead, were in a single instant hurled headlong with a noise like thunder down a steep abyss, or into a wide crevasse, and ground to atoms in the fall. Each sight and sound proclaimed the incessant tendency of material forces towards the equilibrium which is yet unattainable; the longing of matter for that rest which cannot be reached; the constant attractions and repulsions of nature's frame, which, were they to cease, would result not in the order and perfection of life, but in the stillness and chaos of everlasting death. Never before did I hear the voice of the Eternal, in the sounds of earth, so unmistakeable, so impressive, as in these utterances of the glaciers. Never before did I realize the weight of meaning in these apparently simple words of the Psalmist, "He scattereth His hoar frost like ashes; He casteth forth His ice like morsels;

who can stand before His cold?" These mighty glaciers were no more to Him than the feathery flakes of falling snow which the child catches in its tiny hand. By the simple process of abstracting a few degrees of heat from the vapours that floated, light and airy as shapes in a dream, on the mountain summits, these morsels of ice were formed, before whose silent concentrated power the hardest granite crumbles into dust, and the proudest mountains are ultimately brought low; and it thrilled me with unspeakable awe to recognise in the "signs and wonders" around me the same Almighty Arm which piled up the waters of the Red Sea in crystal walls, and opened up for the chosen people a way of escape. Miracles of nature such as these made the most wonderful miracles of Scripture intelligible and easy of belief.

The feeling of astonishment and dread which these "ice-morsels" produce at a distance, is greatly increased by a closer acquaintance with their physiognomy. Everywhere their surface is broken up into rents or fissures called *crevasses*. These are largest and most numerous at the edges, and are caused by the motion of the glacier over the inequalities of its bed. They are sometimes very deep, the plummet failing to find bottom at a depth of six or seven hundred feet; and they vary in width from a narrow crack, over which a child can step, to yawning chasms three or four hundred feet across. It is no easy task to thread one's way among their slippery labyrinths. So tortuous is the maze into which the traveller is led that escape often seems hopeless; while so narrow is the neck of ice that separates the one from the other,

that there is often hardly standing-room between them, and the unconscious dangers behind have to be guarded against as well as the obvious ones before. During a fall of snow many of the crevasses are concealed by a treacherous covering of it; and the surface of the ice looks uniformly smooth and white. In these circumstances a single incautious step may be attended with the most fatal consequences; and no traveller should cross a glacier so coated without carefully sounding his way, and being tied with a rope to his guides. In the higher ice-regions the crevasses are on a vast scale; but even on the more disturbed parts of the Mer de Glace they present a spectacle of great grandeur. In crossing the glacier on my way homewards from the Couvercle I had often to retrace my steps, or take a long circuitous route in order to avoid them. Some of them were fringed with icicles of the most fantastic shapes, and others had smooth perpendicular walls of glittering ice. I had the curiosity to descend into one, which happened to be choked up at a depth of thirty or forty feet by huge boulders of granite; and the appearance which it presented was most magical. It was like a fairy-palace of sapphire; the walls of ice around me being of the loveliest and most vivid blue colour, radiating a soft cerulean light throughout the whole place. There was a coldness and unearthliness about it, however, which repelled and prevented me from fully enjoying its exquisite beauty; and I remember well the involuntary shudder that crept through my frame as I looked down, through the vacant space between the boulders, into the blue gloom of the fearful abyss,

hundreds of feet below, and listened to the hollow all-pervading murmurs of the subglacial streams, that came up to my ear like the groans of tortured spirits.

Accidents in these crevasses have been very numerous. Hardly a year passes, but one or other of them forms the grave of some hapless traveller or mountaineer. About the end of last century, the innkeeper of Grindelwald fell into a deep crevasse in the upper glacier which flows into that beautiful valley. Happening to fall gradually from ledge to ledge, he reached the bottom in a state of insensibility, but not seriously injured. When he awoke from his stupor he found himself in an ice-cavern, with a stream flowing through an arch at its extremity. Following the course of this stream along a narrow tunnel, which was in some places so low in the roof that he could scarcely squeeze himself through on his hands and knees, he came out at last at the end of the glacier into the open air. A priest of the same district was not so fortunate. Being an enthusiastic student of natural history, he set out one day to explore the higher regions of the same glacier, accompanied by a guide. Late in the evening the guide returned to the village alone, asserting that his companion had fallen into a crevasse. Suspicion was excited that he had been murdered for the sake of the money and valuables which he carried about with him; and for twelve days a diligent search was made for his body without success. At last they came to an awful chasm, which the guide identified as the scene of the tragedy. A man was let down by a rope with

a lighted lantern round his neck, and twice was he drawn up in a state of exhaustion, but the third time he returned with the corpse in his arms. It was horribly mangled, but all the property was safe, and so this Judas turned out to be "not Iscariot." Jacques Balmat, who was the first to set foot on the virgin summit of Mont Blanc, a feat which he accomplished all alone, terminated his adventurous career in one of the most frightful crevasses in a glacier of Mont Rouan. A most touching story is told of a Russian gentleman who fell into a deep chasm in the St. Théodule glacier about seven years ago. As his guides looked over the edge, they saw him far below, wedged in between two walls of ice, "with his head down, waving his right arm, which was free, for help." They let down their rope, but it was not long enough to reach him. One guide ran to the nearest habitation, many miles off, to get a longer one, while the other remained beside the spot. "Pray for me; I need your prayers," came in a faint voice from the depths. For five terrible hours, that seemed as long as centuries, the poor prisoner's hand was seen rising and falling in dumb piteous entreaty. Slower and feebler grew the motion, and at last the arm fell down for ever in the stillness of death. When the guide came with the rope, all was over. He called again and again, but no voice replied. It is impossible to exaggerate the horrors of such a fate; and the imagination shrinks from picturing the feelings of the wretched man as minute after minute passed without succour, and his life ebbed slowly away frozen in the Medean embrace of the glacier. The mercilessness

of nature strikes one forcibly in such situations. It ploughs its resistless way with equal carelessness over palpitating human flesh and blood as over the insensible rock, and engulphs in its icy bosom a warm loving human heart with the same steadiness as it does a boulder stone. Oh! how weak and helpless is man, when thrown forth from the social scenes and comforts of civilized life, and forced to contend with the stern energies of the physical world! It is a blessed thought, however, that we are not left in the power of blind unsympathetic nature. There is One who "casteth forth His ice like morsels," upon whose infinite pity and fatherly love we can count, and whose strength is made perfect in our weakness. The display of His power is at the same time the revelation of His heart: and the forces of nature, when connected, as they ever should be by us, with His guidance and control, are not reasonless, merciless forces, but the kind servants of a Holy Will, the faithful messengers of an Intellect that cannot err.

Besides crevasses, the surface of the glacier exhibits many other strange phenomena. Great blocks of stone, many of them tons in weight, rest on the smooth and slippery ice, as lightly as sea-gulls on the crests of the billows. They are sometimes so delicately poised on the edge of a chasm, that a touch, a sound, the slightest vibration of the air, sends them into the abyss with a loud reverberation. Huge fragments of rock by the score are seen lifted up on slender pyramids of ice, ten or twelve feet high, only to be hurled down again when these capricious columns have melted. All these boulders are broken off by

weathering from the precipitous rocks that tower above the flanks of the glacier and fall upon its surface; and it is one of the strangest things imaginable to see them day by day borne slowly onward by the motion of the ice, until at last they are hurled into the huge heap of mud and stones called *moraines*, which the glacier deposits at its termination. It is extremely dangerous to stand beside or beneath the end of a glacier, on account of the volleys of stones that are constantly discharged from it. Such boulders are the moveable milestones by which the motion of the glacier is made palpable to the eye. It is so contrary to our usual observation and experience to be told that vast structures of ice like these can move, that we require a simpler and more obvious test of its truth than the explanations of scientific men. There is no ductility that we can see in the substance. It seems as hard and inflexible as iron, flies in pieces beneath the blow of a hammer, and cuts the flesh like a knife. And yet, notwithstanding the evidence of our senses, the onward movement of the stones convinces us that "it moves still." Nor can the imagination fail to be powerfully impressed when it contemplates the slow and gradual but constant march of these stupendous accumulations of ice. Every particle of snow that falls upon the heights above is pressed down into these glaciers, undergoes all the changes to which in form and substance they are exposed by the pressure of their own mass, and by the irregularities of the rocky surface over which they flow, and at last it arrives at the terminal moraine, and there weeps its chill life away. The motion of

glaciers varies in different parts—being more rapid at the centre and on the surface, and slower at the bottom and the sides. They have been calculated to advance in general on an average at the rate of 500 feet a year. A very remarkable incident was the means of shedding considerable light upon this difficult problem. In the year 1820 three of the guides who accompanied Dr. Hamel, of St. Petersburg, in his ascent of Mont Blanc, were swept by an avalanche into a crevasse in the upper portion of the Glacier de Bossons. In 1861 traces of them were found in the shape of a knapsack, lantern, two skulls, and portions of human limbs to which particles of flesh still adhered, on the surface of the lower levels of the glacier. Thus, after an entombment of forty years, these bodies, by the unerring laws of nature, were disgorged; and the distance between the spot where they perished and that in which they were found, indicated the rate of motion of the most precipitous and tumultuous of all the glaciers of Mont Blanc.

"He casteth forth His ice like morsels." The idea in David's mind could not possibly have been commensurate with the vastness of the subject. His experience of the wonders of the ice-world was necessarily very limited. In a warm climate like that of Palestine, all that he knew of the effects of cold was confined to the perpetual vision of Hermon's snowy peak, to an occasional snow-shower which scarcely whitened the ground, and to a thin superficial freezing of the streams in the hill-country of Judea during an unusually severe winter. And when he speaks of God casting forth His ice like morsels, he desires only to express his

intense sense of the omnipresence of providential energy. Frost and snow were to him not a study in themselves—for he had not materials for such a study—but a fleeting glimpse of the eternal Power. They are used only allusively, as a kind of pictorial language to shadow forth his higher thoughts of God. And we too, though we live in a colder climate, and have an annual winter of snow and frost binding up and clothing in spotless purity the desolate face of nature, know comparatively little of what the Psalmist's words involve. It is only among the glacier regions that their full significance begins to dawn upon us. When face to face with these unmeasured fields and mountains of ice, we feel "how dreadful is this place;" how terrible must be the Power which casteth forth these enormous accumulations of thousands of winters, like morsels; how strong must be the Hand which regulates the silent ceaseless flow of these frozen cataracts, and controls one of the most potent and awful forces of nature. There are no less than five hundred and forty glaciers in Switzerland, of which the mightiest mass is the Bernina, and the most extensive the great Aletsch Glacier, fifteen miles in length. The glacier domain extends from Mont Blanc in Savoy to the Ortler Spitz in the Tyrol, over an area of more than a thousand square miles. And yet mighty as these "ice-morsels" are, they are as nothing compared with the great glacier systems of the Arctic and Antarctic regions. Dr. Kane describes one in the far north which presents a continuous sea-cliff of ice more than a thousand feet in height, and seventy miles in breadth; and the terrible

mysteries of frost and fire in the Antarctic regions are rendered inaccessible by a glacier cliff called Victoria Barrier, four hundred miles long, one hundred and twenty broad, and upwards of eighteen hundred feet in depth, descending into the sea from the frozen sides of the burning volcano of Mount Erebus. It is from these grim walls guarding the northern and southern poles that ice-bergs are broken off, which serve to modify the temperature of the regions between, and whose vast size and fantastic shapes excite the curiosity as they appal the heart of the mariner. When our imagination realizes, in some faint degree, these wonders of the frost kingdom, we are overwhelmed by the thought that He who "casteth forth His ice like morsels" is the God with whom we have to do. "Hast thou entered into the treasures of the snow? or hast thou seen the treasures of the hail? By the breath of God frost is given; and the breadth of the waters is straitened."

And not wantonly or capriciously are these morsels of ice cast forth. There is no waste of power with the Almighty. There is an economy in Nature's miracles as well as in those of grace. We are not accustomed to think of frost and ice as affording evidences of benevolent design; on the contrary, we regard them with dread as elements of destruction and death. And yet for beauty and usefulness, for ministering to the corporeal wants and the æsthetic tastes of man, they yield to no other objects of Nature. Examine under the microscope one of the flakes of snow that fall—so pure and white from clouds so black—and no lily or snowdrop can be

more beautiful than that blossom of cold. It is six-leaved; it radiates on every side in the most exquisite crystalline forms, so ethereal, so spiritual, like the ghosts of the flowers that perished in the summer, coming back again from heaven to earth. Ice is but a mass of starry crystals closely compacted together. When the rays of the sun are directed, by means of a lens, into a piece of pure ice, the most wonderful change is produced in its structure, clearly revealing the mode of its formation. Along the line which the concentrated sunlight traverses in the interior of the ice, hundreds of liquid flowers of six petals, sometimes isolated, and sometimes grouped in bouquets, but all preserving with the utmost distinctness the starry outline, flash back the light like burnished silver, and form a spectacle of novel and entrancing beauty. And what can be lovelier than the glittering jewels with which the hoar-frost bedizens every leaf and spray of the woodland; or the translucent azure of the glacier crevasses with their long pendants of lustrous ice? There are beautiful things in winter as well as in summer; and we need the cold unearthly splendours of the one, as much as the glowing living charms of the other, to educate our sense of God's greatness in His works. But beauty is everywhere in Nature the flower of utility; and in the realms of frost this quality is most strikingly displayed. The covering of ice which seals up our streams and lakes prevents the water from being frozen to any considerable depth, preserves its inhabitants from destruction, and places it at all times within reach of man.

The glaciers of Switzerland serve most important purposes in the economy of nature. They are placed where they are by a wise and benevolent arrangement. They bring down the refreshing coolness of the Alpine summits into the hot and stifling valleys; they repress, in their calm and placid bosoms, the violence of the avalanche and the rage of the torrent; and carry within reach of man, in tamed and measured usefulness, forces which, if allowed to leap suddenly from the mountain tops at their own fierce will, would convert some of the fairest regions of Europe into waste and howling deserts. From them all the great rivers of the Continent spring; and thus a constant and unfailing supply of water, in summer's drought and winter's frost, is provided for all the uses, commercial and domestic, of the highest civilization. The vapours that fall in the shape of snow on the Alpine peaks are collected and frozen in these gigantic reservoirs, and thus borne gradually and safely down the mountain sides, until they reach a point, often amid green fields and human habitations, where they remain stationary, the supply above and the waste below being exactly equal. At this point a full-bodied arrowy stream, like the Arveiron from the Mer de Glace, caused by the melting of the glacier in the warmer temperature, issues from a cavern in the ice, and flows down the valley, nourishing the meadows along its course. Turbid with mud, ground from the rocks by the glacier, it gradually, as it descends and becomes more tranquil, deposits this mud along its banks, which are thus continually shifting; and year by year new soil and new elements of

fertility are imparted as far as the stream extends. The loss of the mountain is the gain of the valley; and from the ruins of the Alps, by this sublime agency, many of the most luxuriant meadows in Switzerland and Italy are formed. All this ought surely to convince us that God "casteth forth His ice like morsels," not aimlessly or at random, where it may work ruin and death, but with that gracious care and wise forethought for life and beauty, which are so conspicuous in all the physical arrangements of Him whose "tender mercies are over all His works."

Yet more. These "ice morsels" have been powerful instruments in ages past in shaping our earth. They have been, as they still are where they occur, nature's giant sculptors. The mountain ranges that were ejected from the burning depths of volcanoes into the freezing cold of the sky, were ground down into smooth and flowing outlines by the sliding of glaciers over them. In the Scottish Highlands we can trace, by the unmistakeable signs which they have left behind, the presence and operation of ancient glaciers. Our valleys are made picturesque by their moraine-mounds, our hill-sides are strewn with their gray boulders, and our rocks are smoothed and grooved by their powerful chisels. The soft and rounded contour of our mountains, on which the effects of light and shade at noon are so exquisite, and whose quiet beauty steals into the heart and lifts it up to a region of immortal peace like their own, has been moulded by ice, passing from the high ranges of the interior outwards and seawards ages and ages ago. The glory of Lebanon itself was due to the ice-

morsels which God once scattered on its summits. The fragrant cedars had their roots in the moraines deposited in the Kedisha valley by glaciers, that, under very different conditions of climate, once occupied the upper regions of the mountain. Revelations like these, which modern science has made, open up new vistas of marvellous thought in the calm old Bible subjects; and show to us how, by the most unfavourable means in the field of nature, as in the sphere of human life, the All-Wise brings order out of confusion, and life out of death. Alpine flowers are warmed by the snow; the summer beauty of our hills, and the autumn fertility of our valleys, have been caused by the cold embrace of the glacier; and so by the chill of trial and sorrow are the outlines of the Christian character moulded and beautified. And we who recognise the loving-kindness as well as the power of God in what may seem the harsher and more forbidding agencies of nature, ought not to be weary and faint in our minds, if over our own warm human life the same kind pitying Hand should sometimes cause His snow of disappointment to fall like wool, and cast forth His ice of adversity like morsels; knowing that even by these unlikely means shall ultimately be given to us too, as to nature, the beauty of Sharon and the excellency of Carmel.

CHAPTER III.

GRASS.

"*If God so clothe the grass, which is to-day in the field, and to-morrow is cast into the oven; how much more will He clothe you, O ye of little faith?*"—LUKE xii. 28.

WE are told that "the invisible things of God, from the beginning of the world, are clearly seen, being understood by the things that are made." From the very first, a spiritual significance was embodied in the physical forms and processes of the universe. Nature as a whole was meant to be for man the vesture of the spiritual world. There are close natural affinities between the things that we see around us and the mysteries of our own life and of God's relations to us. Our familiarity with these things, as objects of use and profit in daily life, may hide their higher meaning and importance from our view; the blinding effects of sin may so veil them that they may suggest nothing to our minds; but they are nevertheless, by a necessity of their nature, continually testifying to us of the unseen world; and he who studies them aright will be delighted to find in them pictures of heavenly truth, shadows and reflections of eternal realities. Our Saviour's parables lifted the

veil from the face of nature, revealed to us the exact relationship between the natural and the spiritual world, and connected the things of sense with the things of faith, from which sin had divorced them. And the analogies in what we usually call Christ's figurative language are not really metaphorical, but exhibit the perfect insight of our Saviour's mind into the purposes and ends of that material world which was created *by* Himself and *for* Himself, as a magnificent diagram to illustrate His spiritual lessons, and show forth His glory.

No natural object gathers around it so many scriptural associations, and suggests so many spiritual analogies, as the grass of the field. The wailing sibylline voice, borne on every breeze, has never ceased to echo over the earth, "All flesh is grass." This burden of Nature's prophecy is true literally as well as metaphorically. It is one example among innumerable others of what has been often observed, that the poet is the real philosopher, and the truest language necessarily what we call figurative. The lesson which the perishable form of the grass teaches, is rendered more impressive still by the enduring part which its structure performs in the economy of nature. It is the first organized agency that extracts, by its living energies, nutritious particles from the hard inorganic soil. In its tissues the dust of the earth first becomes vital. Day and night, season after season, it is unceasingly purveying for the wants of the animal kingdom, gathering the materials of nourishment and strength from the air and earth, reducing the impalpable and evanescent forces of light, heat, and mois-

ture, into solid and enduring forms, which can be eaten and transformed into complicated organisms and vital powers. Man cannot live upon grass, properly so called. He cannot derive a direct subsistence from it. The experiment was once made in notable circumstances, but it turned out a deplorable failure. During the disastrous campaign of Napoleon's army in Russia, the soldiers, in the absence of all other food, were obliged to boil and eat the common grass of the field, which they dug out from beneath its covering of snow and ice; and in every case where this wretched food was partaken of in sufficient quantity to allay the intolerable cravings of hunger, delirium and racking pains were the results. But, though grass eaten directly would prove injurious to man, inasmuch as his digestive organs are not adapted for its assimilation, it forms the support of domesticated animals, which he rears exclusively for their use as human food. The materials of his structure are first derived from the air, earth, and water, by means of grass; they are still further organized and prepared by the agency of graminivorous animals; and they reach him at last in a proper condition for his nourishment in the shape of animal food. The grass of the field is thus indirectly, but most truly, man's stay and support.

But there is a way in which even directly grass forms human food. The stem and blades, and other inferior parts of the vegetation, are intended for the support of the inferior animals; but the fruitful ear, the more highly-organized seed, the crown and consummation of the plant, the "flower of grass," into

which its vital powers and nourishing qualities are drawn up and concentrated, is reserved for food to man. We must not forget that the various kinds of cereal grain—such as corn, wheat, rice, and maize—are the produce of true grasses; and that, while the straw and fodder are given to the beasts of the field, the nobler structure of man is maintained by the nobler part of the grass, which extracts virtue out of the sunshine and dew, and out of the intangible forces which play beneath the varied skies of summer and autumn, and presents it in the simple form and peculiar mode of combination which is essential to healthy nutrition, to glow within our veins and animate our nerves. How strange to think that the most highly organized of the inhabitants of the earth, created in the image of God, should thus depend for his subsistence directly and indirectly upon the lowest and simplest of all herbs! He is not nourished, as we should antecedently expect, by the palm-tree, or the fruit-tree, or by plants which bear some relation in size, grandeur of form, and complexity of structure, to himself—but by the humble grass of the field, the first vegetable which clothes the naked bosom of the earth. The two extremes of creation are thus, as it were, brought together, forming a remarkable contrast to each other, and yet clearly proving the wonderful system of relations which unites together all parts of the universe—the highest with the lowest, the mightiest with the most minute. Reflections like these give a new and striking significance to the words of the apostle, showing them to be not merely figuratively, but also literally true—figuratively, *because* literally true—"All

flesh is grass, and all the glory of man as the flower of grass." All flesh fades like the bright green evanescent blades of grass, from which all flesh is formed; all the glory of man vanishes like "the flower of the grass," out of which that glory sprang.

One of the most beautiful parables of our Saviour is that in which He teaches the lesson of human dependence upon Divine care: "If God so clothe the grass, which is to-day in the field, and to-morrow is cast into the oven, how much more will He clothe you, O ye of little faith?" Nature in summer impresses this parable upon our minds. The lesson of Jesus is illustrated and enforced by the silent but eloquent beauty of the May fields. An emerald rainbow of mercy is then around the warm, quickened bosom of the earth, assuring us that He who clothes the naked soil will clothe us too. Nay, we see the very process by which the Divine covenant is being fulfilled going on day after day under our eyes. We see the flax extracting from the earth the materials of those fibres which are to be woven into garments for us. We see in our pasture-lands the sheep converting, by some mysterious vital action, the grass which they eat into snowy fleeces to keep our bodies warm. Our food and raiment come from the same humble source; and the grass may, therefore, well be employed to teach us our frailty and dependence upon God for our temporal blessings. We know that the same law which regulates and limits the supply of our *food* from the grass, also regulates and limits the supply of our *raiment* from the grass. We are apt to think that, by aid of our vast mechanical appliances, we

can produce the materials of clothing in unlimited quantity, but the slightest reflection will convince us of the fallacy of this idea. Wool and flax are in reality as difficult to produce as corn; nay, more so; for, while they are equally subject to the vicissitudes of the seasons—to blights, and storms, and diseases—they cannot, like the corn, be produced in every country, being confined to certain regions and peculiar climates. The annual stock of clothing materials, like the annual supply of food, is sufficient only for the annual consumption of the human race; so that, year after year, we have to work for our raiment as we have to work for our meat. We can no more accumulate and lay up in store our wool and flax than we can accumulate and lay up in store our corn. Unless immediately used, the moth will corrupt the one, as the mildew will destroy the other. And in all this we have a most convincing proof of the beautiful harmony that exists between the moral and the physical laws of the universe. He who "causeth the grass to grow for the cattle," and by this agency brings food and raiment out of the earth for man, has commanded us to "take no thought for the morrow." And the limitations which He has imposed upon the production and preservation of our food and clothing, the only true riches of the world, teach us most impressively that "by taking ever so much thought we cannot make ourselves independent." We are brought back from all our vain efforts and covetous desires after an inexhaustible store of life's necessaries, from the faithless faint-heartedness which is too often the principal motive in the pursuit "of the phantom independence,"

to a simple, child-like trust in Him who hath promised to feed and clothe us as He feeds and clothes the grass of the field.

Let us look for a little at this clothing of the grass, which we are taught to regard as a pledge and guarantee of our own clothing. The sacred writers did not dwell directly on the beauty of nature. There is no artistic painting in Scripture, no colouring or drawing for the sake of the picture itself, rather than for any purpose which it is to serve. Our poets never weary of "the splendour in the grass, of glory in the flower." The Hebrew poet, doubtless, perceived that glory and splendour too; but he uses them only in incidental illustrations and allusions, to colour spiritual thoughts. The grass and the flower are not beautiful or glorious for their own sakes, but solely as pictures of spiritual things, as hieroglyphics in the alphabet of Divine language. It is right, however, that we should regard the objects of nature with interest for their own sake, as appealing to our love of beauty, and affording to us proofs of heavenly design; and, while the Bible teaches us that nature must be interpreted by our knowledge of God, we shall find a most delightful and profitable sphere of study in interpreting God by our knowledge of nature, which He designed to be not a veil, but a revelation. The grass of the field is well worth studying in this way. It is said of the great Galileo—who had been accused of infidelity because he asserted that the earth went round the sun, in apparent contradiction to the language of Scripture—that when questioned by the Roman Inquisition as to his belief in the

Supreme Being, he pointed to a straw lying on the floor of his dungeon, saying to his accusers that, from the structure of that trifling object, he would infer with certainty the existence of an intelligent Creator. And this is the welcome conclusion to which an attentive examination of the grass of the field inevitably leads.

No proof of the Creator's care in ministering to the higher tastes and capacities of man is more striking than the abounding and universal beauty of the grass. How dull and uninteresting would the earth be without its soft, bright verdure! In every landscape it is the most conspicuous object, the ground-colour on which Nature embroiders her varied patterns, and from the midst of which the gay hues of flowers come forth in greater brilliancy, by the force of contrast, to arrest the admiring gaze. What can be lovelier than the meadows in May? The eye that has lately looked out on the cold plain of snow or the leafless tree, gazes with delight upon the "tender grass springing out of the earth in the clear shining after rain," so richly, delicately, transparently green. And when the season advances, and the grass twinkles in the warm air, and the daisies in thousands open their round innocent eyes in wonder among it, and the buttercups spread over it their cloth of gold; and the bright sunbeams and the light-footed shadows of the fleecy clouds overhead chase each other in little rippling waves over its surface, like smiles and thoughts over a human face,—it seems as if a larger and a brighter feeling of life came with the lovely spectacle, and as if every tiny spear of grass bore the admiring spirit

upon it from the decays of earth nearer to the glory and the fulness of heaven. No sight can be fairer than a woodland nook, or a forest-glade with the tall untrodden grass in its dewy freshness, waving under the trees, intermingled with palmy clusters of fern-leaves, and tipped on the top, like billows that break into foam, with snowy wild-flowers; or those round fairy knolls, whose pillowy softness invites the dreamer to repose in the noonday heat, and which offer themselves in mammary tenderness to feed the rabbit and the wild deer. Beautiful is the grass when it covers the decaying thatch of the cottage, making it look more like a natural object than a work of man; tender it is, when it lays its rich carpet beside the threshold of the poor, to soften unconsciously the heavy footfall of toil, and refresh the weary eye of care, and remind the lowliest, by its mute appeal, of their share in nature's feast of simple gladness.

Nowhere is the beauty of the grass seen to so much advantage as in our own country. Its exquisite verdure makes the pastoral landscapes of Britain among the loveliest spots of earth. The grass in Palestine, owing to the dryness of the soil and the heat of the climate, is neither universal nor perennial. In some few favoured spots, where the air is moist and the sun shaded by trees, it grows in rich profusion, and forms a continuous sward. We are told that there was "much grass" in the wilderness of Capernaum, where the miracle of the loaves and fishes was performed, and that the compassionate Saviour made the weary and hungry multitude sit down on it. It fills up the ground-work of the beautiful scenic pictures of Le-

banon and Galilee; it springs up in the lifeless deserts of Judea to the music and the sparkle of the desert fountain. But in general the face of the country is but thinly clad with it. The bright showers and sunbeams of spring stimulate it into rapid growth; but in the scorching glare of summer it speedily withers, leaving the fields brown, and the hills bare and desolate. And hence most of the images derived from it in Scripture are sad and melancholy, and speak more of human vanity and decay than human hope and lifefulness. Every traveller admits that an English meadow in May is a far lovelier sight than the lily-covered slopes of Tabor, or the oleander-wreathed shores of Gennesaret. The exuberant vegetation of the East does not sufficiently hide the cracked and parched soil, and forms but a poor substitute for a bright elastic carpet of silken grass, such as covers our lawns and fields from summer to summer in perennial luxuriance. The eye soon tires of flaunting flowers, but it never wearies of the modest livery of the grass. Its simple verdure is earth's chosen robe, the household dress of our common mother, and none else becomes her half so well.

Look at each single plant, and you will find that the beauty of the mass is still more strikingly displayed in the individual. The finest ribbon of man's manufacture cannot for a moment be compared in richness and transparency of texture to its blades. How graceful is the tall waving culm or stem, with its knotted joints! How light and airy are its silvery and purple panicles, so modest and sober that few would suspect them to be blossoms at all! How delicately

fashioned is each part of the bearded plume! A model of symmetry, elegance, and strength, is each little spear of grass that pierces the sod and shimmers in the sunshine. Though formed to be cropped by the beasts of the field, and trodden under foot of man; though "to-day in the field and to-morrow cast into the oven;" there is as much skill expended in its construction as in the palm-tree destined to last for centuries, and lifting up its head securely above the ravages of man and beast. Ask the skilful artist to construct for you a plant which will bear uninjured the summer's heat and the winter's frost; which will rise elastic from the heavy footstep and the cumbrous snow-wreath; which will speedily re-form the parts that have been broken off or injured; which will wave with the wind, and stand upright under the rain and hail; which will unite elegance with strength, slenderness with beauty, and eminent usefulness with all;—and how vain and abortive would be his attempts. And yet all these opposite qualities unite in the lowly grass which covers with countless fac-similes of itself a single acre of meadow, and fit it admirably for the purposes which it serves and the circumstances in which it grows.

The structure of the grass exhibits interesting proofs of design. The root, in proportion to its size, is more fibrous and tenacious than that of any other plant. In some instances it is so vital that, like Hercules' Hydra, the more it is hacked and cut, the faster it spreads itself; and it runs so extensively, each joint sending up a new shoot, that it encloses a considerable space of soil. In this way the grass clusters closely

together, and covers the ground as with a carpet; while, in the absence of blossoms, which are often prevented from forming by the cropping of animals, the budding roots propagate the plant, so that the effect of grazing pasture-lands is always to increase the vegetation laterally, and make the verdure more compact. The stem or culm is hollow, provided at intervals with knots, and invested, as if by some mysterious process of electrotype, with a thin coating of flint. It is constructed in this manner so as to combine the utmost strength with its light and elegant form; and so efficient are these mechanical appliances, that it rarely gives way under the force of the most violent winds, unless when heavy and long-continued rains lay it prostrate, and beat upon it until its elasticity is destroyed. The leaves next exhibit an adaptation to circumstances no less remarkable. They are spear-shaped, and strongly ribbed with threads of flinty fibre, thus forming wedges admirably fitted for forcing their way with least resistance through the soil; they are long, narrow, alternate, and sheathing the stem for a considerable distance, in order to present as small a surface and give as light a hold as possible to the winds; they are destitute of branches, so as to qualify them for growing together in masses without suffering from want of air and light—the whole stem being succulent and covered with spiracles or air-holes, thus acting as lungs along with the leaves. And last of all, the flower is a perfect miracle of design. It is produced from the upper sheath, which encloses it altogether when young; it is disposed in simple or branching heads, each head consisting of two or more chaffy

scales, inserted the one above the other, like the plates of a steel cuirass. From each of these scales three slender white threads hang out, crowned with yellow dusty knobs, playing freely about in every breeze. These little threads or stamens are of the most vital importance; for without their agency the ears of corn would not fill with the nutritious grain, and they are exposed to a thousand casualties. Upon how slender a thread, then, does human life—sustained by bread—hang! Upwards of three hundred genera and more than five thousand different species of grass exist in the world. But though presenting so many varieties, the typical character is singularly strong in them all; the whole appearance, the general air, the manner of growth, the peculiarities of structure, are in each species so similar, that no class of plants can be so easily identified. The Creator has repeated the same pattern more frequently in the grass tribe than in any other order of vegetation, as if in admiration of its grace and simplicity. Its exquisite perfection enables us to see some deeper aspect of the Divine character than the mere intelligence of a contriver—enables us to see God's care for helplessness and lowliness—His care for beauty as an end, and not as a mere means. It impresses us with the perfect wisdom of an Infinite Spirit, and not with the limited ingenuity of a finite mind. It displays intellect as well as intelligence, purpose as well as design, character as well as contrivance, personality as well as law. In studying it, we seem to get within the veil behind which the Creator works in secret; we come into contact, as it were, with His mind and heart; we see Him who is the

Invisible. Standing on the green sward, each blade of grass whispers to the inner ear, "Take thy shoes from off thy feet, for the place whereon thou standest is holy ground;" and the response of every devout spirit must be, "Surely the Lord is in this place, and I knew it not."

"He maketh grass to grow upon the mountains." The wild grasses are taken, as it were, under the special providence of God. In their perennial verdure in regions above the zone of man's cultivation, we have a perpetual proof of God's care of the lower animals that neither sow nor reap. The mountain grasses grow spontaneously; they require no culture but such as the rain and the sunshine of heaven supply. They obtain their nourishment directly from the inorganic soil, and are independent of organic materials. Nowhere is the grass so green and vigorous as on the beautiful slopes of lawn-like pasture high up on the Alps, radiant with the glory of wild flowers, and ever musical with the hum of grasshoppers and the tinkling of cattle-bells. Innumerable cows and goats browse upon them; the peasants spend the summer months in making cheese and hay from them for winter consumption in the valleys. This exhausting system of husbandry has been carried on during untold centuries; no one thinks of manuring the Alpine pastures; and yet no deficiency has been observed in their fertility, though the soil is but a thin covering spread over the naked rocks. It may be regarded as a part of the same wise and gracious arrangement of Providence, that the insects which devour the grasses on the *Kuh* and

Schaf Alpen, the pasturages of the cows and sheep, are kept in check by a predominance of carnivorous insects. In all the mountain meadows, it has been ascertained that the species of carnivorous are at least four times as numerous as the species of herb-eating insects. Thus, in the absence of birds, which are rare in Switzerland, the pastures are preserved from a terrible scourge. To one not aware of this check, it may seem surprising how the verdure of the Alpine pastures should be so rich and luxuriant considering the immense development of insect life. The grass, whenever the sun shines, is literally swarming with them—butterflies of gayest hues, and beetles of brightest iridescence; and the air is filled with their loud murmurs. I remember well the vivid feeling of God's gracious providence, which possessed me when passing over the beautiful Wengern Alp at the foot of the Jungfrau, and seeing, wherever I rested on the green turf, alive with its tiny inhabitants, the balance of nature so wonderfully preserved between the herb which is for man's food and the moth before which he is crushed. Were the herbivorous insects allowed to multiply to their full extent, in such favourable circumstances as the warmth of the air and the verdure of the earth in Switzerland produce, the rich pastures which now yield abundant food for upwards of a million and a half of cattle would speedily become bare and leafless deserts. Not only in their power of growing without cultivation, but also in the peculiarities of their structure, the mountain grasses proclaim the hand of God. Many of them are viviparous. Instead of producing flowers and

seed, as the grasses in the tranquil valleys do, the young plants spring from them perfectly formed. They cling round the stem and form a kind of blossom. In this state they remain until the parent stalk withers and falls prostrate on the ground, when they immediately strike root and form independent grasses. This is a remarkable adaptation to circumstances; for it is manifest that, were seeds instead of living plants developed in the ears of the mountain grasses, they would be useless in the stormy regions where they grow. They would be blown away far from the places they were intended to clothe, to spots foreign to their nature and habits, and thus the species would speedily perish.

The more we think of it, the more we are struck with the wise foresight which suggested the creative Fiat, "Let the earth bring forth grass." It is the most abundant and the most generally diffused of all vegetation. It suits almost every soil and climate. Wherever the conditions of vegetation exist—from the icy plains of Spitzbergen to the volcanic scoriæ of the Antarctic islands; from the sunny sea-shore to the dreary Alpine snow-line—there in some form or other it is sure to be found, struggling with adverse circumstances, maintaining the dominion of life over dead matter, incorporating in its frail tissues the forces of nature, preserving the atmosphere in a state of purity by feeding upon its noxious vapours, fringing the limits of eternal barrenness with beauty, often the only softening touch of tenderness beneath the scowling heavens. It attains its maximum of richness and growth in temperate regions, where the need

for it is greatest. As we go northwards, it becomes short in stem and narrow in leaf, and forms a continuous closely-matted sward of verdure; as we go southwards, its stem becomes tall and its leaves broad, and it grows in isolated tufts, generally in swampy places or on river banks. It forms pastoral landscapes under the weeping skies of Europe; it forms bamboo forests and cane-brakes under the glowing skies of the tropics. It ministers to the food of man in mild climates; it ministers to the luxuries of man in hot climates. It may, however, be said to cover with a uniform green mantle the whole surface of the globe. And this mantle is not only ornamental, but eminently useful. It protects the roots of trees and flowers from the scorching effects of the summer's sun and the blight of the winter's frost. By the decomposition of its tissues, when it has fulfilled the purposes of its existence, it forms a layer of vegetable mould for the reception and nourishment of higher tribes of plants. When it grows upon the barren sands of the sea-shore, its long, creeping, matted roots bind down the particles which would otherwise be carried off by the waves; and thus it forms the best bulwark against the encroachments of the ocean. It can lift up its tiny spears against the crested billows, and say with prevailing power: "Hitherto shall ye come, and no farther." When it flourishes on the mountain-side, it performs a similar service to the loose soil, which the action of the elements has disintegrated from the rock; it binds it together by its roots and leaves, and thus prevents it from sliding down in the form of landslips—whose effects in Alpine valleys are frequently

most destructive. Indeed, the great primary object which God intended to serve by the universal diffusion of the grass, seems to be the protection of the soil. Were the soil freely exposed to heaven without any organic covering, it would speedily pass away from the rocks on whose surface it was deposited. The floods would lay bare one district, and encumber another with the accumulated heaps. The sun would dry it up, and deprive it of all its nourishing constituents; the winds would scatter it far and near, and fill the whole atmosphere with its blinding, choking clouds. It is impossible to imagine all the disastrous effects that would be produced over the whole earth, were the disintegration of the elements not counteracted by the conservative force of vital growth; and the destructive powers of nature not kept in check by the apparently insignificant, but actually irresistible, emerald sceptre of the grass. The earth would soon be deprived of its vegetation and inhabitants, and become one vast desert catacomb, a gigantic lifeless cinder, revolving without aim or object round the sun.

I began this paper with the assertion that man lives, both directly and indirectly, upon grass; I close it with the inevitable antithesis, that grass lives upon man. The melancholy words of Scripture, "All flesh is grass," are equally true whether we read them backwards or forwards. Strange mysterious circle of relations within which all organized nature is contained, and in which man himself, in common with the beast and herb of the field, has to perform his part and exchange offices and duties! The particles which circulate through his system must be again reduced

to the inorganic state, out of which they were first formed, and restored to the tissues of the grass from which he derived them. The debt of nature must be paid; the obligations which for threescore years and ten had been accumulating must be discharged at last. The body, that had been sustained in life by the yearly produce of the fields, must return again to the dust to fertilize and enrich the produce of future fields, and keep the great vortex of life continually in motion. Grass forms the beautiful and appropriate covering of the grave. As it is the earth's first blessing, so it is her last legacy to man,

> "Whose part in all the pomp that fills
> The circuit of the summer hills
> Is—that his grave is green."

The body that it fed when living, it reverently covers when dead with a garment richer than the robe of a king. When all other kindness in food, and clothing, and emblematic teaching is over, it takes up its silent Rizpah-watch beside the tombstone, and forsakes not what all else has forsaken. Gently does it wrap up the ashes of the loved and lost, wreathing like a laurel crown the cold damp brow with its interlacing roots, drawing down to the darkness and the solitude the warm bright sunshine and the soft dews of heaven. If there be any place where, more than another, I love to see its modest verdure, it is in the village churchyard, whose swelling mounds have been trodden by the tender footsteps of time into less painful prominence. At the close of autumn, when the grass lies withered and brown upon these quiet, forgotten resting-places of the

dead, and the melancholy breeze wails over it, the words of Holy Writ come home to the heart with a deeply solemn and affecting appeal—"As for man, his days are as grass: as a flower of the field, so he flourisheth. For the wind passeth over it, and it is gone; and the place thereof shall know it no more." And if there be a place more than another where, in the bright days of early spring, I love to mark the bursting forth of its first tender leaves, it is also there. Resurrection is preached to us by each of the bright transparent blades, more convincingly than by the most eloquent human sermon. It tells us that our dead have not perished. It confirms the old Hebrew faith which called the grave the "house of the living;" and the exquisitely beautiful idea of Richter, that it is "the green mountain-top of a far, new world." It holds out before us the sure and certain hope that the human seed, "faithful unto death," that is sown in the furrows of God's acre, shall one day rise up to newness of life, and blossom in glory throughout an eternal spring.

CHAPTER IV.

THE TREES OF THE LORD.

"*The trees of the Lord are full of sap; the cedars which He hath planted.*"—PSALM civ. 16.

A PINE forest is one of the most beautiful features of nature. Of all quiet scenes it is surely the quietest. The harsh sounds of the busy human world, and even the dreamy murmurs of summer, are hushed there; no song of bird or hum of insect disturbs the solemn stillness; and only at rare intervals the mournful coo of a dove, making the solitude more profound, is heard in the deeper recesses. The weary, careworn spirit bathes in the serenity of the silence, and feels the charm and refreshment of its highest life. The trunks of the trees have caught the ripened red of many vanished summers, and are bearded with long streaming tufts of gray lichen, which impart to them a weird, savage appearance; but they are touched with grace by the wild flowers growing at their roots; childhood sporting in unconscious loveliness at the feet of old age. They form long-drawn aisles and vistas, like the pillared halls of Karnak, or the Thousand Columns of Constantinople, which are indescribably attractive, for they appeal to that love

of mystery which exists in every mind; they reveal only enough to stimulate the imagination, and lead it onward to lonelier scenes beyond. It is the same vague sentiment of expectation or hope that gives the charm to every natural as well as to every moral landscape. Life itself without these vistas of expectation would not be worth living. When the sun is shining brightly, and pierces here and there through the dusky foliage, the effects of the chequered light and shade, the alternations of green and gold, are very lovely. Richly tinted mosses, that "steal all noises from the foot," palmy clusters of delicate ferns, starry flowers of the Trientalis, waxen bells of the Pyrola, and green and crimson leaves of the blae-berry, cover every inch of ground not occupied by the boles of the trees, and form mosaics more beautiful than those of the Vatican. The dim, slumberous air is laden with an all-pervading balsamic fragrance, strongly stimulating that sense which is more closely connected with the brain than any other, and suggesting numberless vague but sweet associations and memories of the past; while through the pyramidal tree-tops may be obtained glimpses of the quiet sky, which seems to come close to the earth, as if in sympathy, and appears calmer and bluer than elsewhere, by contrast with the dark-green motionless foliage. Beautiful indeed is the pine forest in all seasons: in the freshness of spring, when the gnarled boughs are penetrated and mollified by the soft wind and the warm sun, and, thrilled with new life, burst out into fringes and tassels of the richest green, and cones of the tenderest purple; beautiful in the sultry summer, when among its cool,

dim shadows the cheated hours all day sing vespers, while the open landscape is palpitating in the scorching heat; beautiful in the sadness of autumn, when its unfading verdure stands out in striking relief amid changing scenes, that have no sympathy with anything earthly save sorrow and decay, and directs the thoughts to the imperishableness of the heavenly Paradise; beautiful exceedingly in the depth of winter, when the tiers of branches are covered with pure, unsullied wreaths of snow, sculptured by the winds into curves of exquisite grace. It is beautiful in calm, when the tree-tops scarce whisper to each other, and the twitter of the golden wren sounds loud in the expectant hush; it is more than beautiful in storm, when the wild fingers of the wind play the most mournful music on its great harp-strings, and its full diapason is sublime as the roar of the ocean on a rock-bound shore. I do not wonder that the northern imagination in heathen times should have invested it with awe and fear as the favourite haunt of Odin and Thor; or that, in after times, its long rows of trunks, vanishing in the dim perspective, should have furnished designs for the aisles of Christian temples, and the sunset, burning amongst its fretted branches, should have suggested the gorgeous painted window of the cathedral. It looks like a place made for worship; all its sentiments and associations seem of a sacred and solemn character. Nature, with folded hands, as Longfellow says, seems kneeling there in prayer. It certainly reminds us in various ways of the power, wisdom, and goodness of Him who thus spake by the mouth of His prophet: "I will plant in the wilderness

the cedar, the fir tree, and the pine, and the box tree together: that they may see, and know, and consider, and understand together, that the hand of the Lord hath done this, and the Holy One of Israel hath created it."

Of all kinds of forest vegetation, the pine tribe is the most widely diffused, and the most generally useful. Some species or other may be found from the snows of Lapland to the hottest regions of the Indian Archipelago, and from the level of the sea to the highest limit of trees on the great mountain-ranges. Figuratively it is said of the cedar that its branches shall cover the earth; literally we find its range of distribution co-extensive with the surface of the globe. But though thus mingling with the box tree and the myrtle tree in their chosen haunts, and there beautifying the place of God's sanctuary, and making the place of His feet glorious, there are special regions where the pine forms the sole arboreal vegetation. As the palm is the symbol of the tropics, so the pine is the symbol of the north temperate zone. The palm flourishes in the summer of the world; the pine tree in the winter. Beauty and fruitfulness are represented in the one; strength and patient endurance in the other. The pine is eminently typical of a bleak and inhospitable climate. It is associated entirely in our minds with the gray skies and the rude winds of the North. It forms an essential element in the grandest mountain scenery; and enters into the composition of some of the most magnificent scenic pictures, which the great Artist has painted on the canvas of this world, for the admiration of His creatures. In it we

have the highest moral ideal of trees, which is dependent on their right fulfilment of their appointed functions amid the greatest difficulties. Not in rich soil, and amid soft breezes and warm sunbeams, and with the blue smile of unchanging skies resting upon it day after day, does it grow up in pampered and luxurious selfishness; but on the bare steep sides of rocks, where the soil is of the scantiest, amid the rack of gloomy homeless clouds, and the howling of bitter winds, poverty-stricken, hunger-pinched, and tempest-tortured, it maintains its proud dignity, grows strong by endurance, and symmetrical by patient struggle. It was intended and created by God for the covering of those wild and lonely spots where no other tree could live. "Its character and glory," as Ruskin beautifully observes, "are not, therefore, in the gluttonous and idle feeding of its own over-luxuriance, at the expense of other creatures utterly destroyed and rooted out for its good alone, but in its right doing of its hard duty, and forward climbing into those spots of forlorn hope where it alone can bear witness of the kindness and presence of the Spirit that cutteth out rivers among the rocks, as it covers the valleys with corn; and there, in its vanward place, and only there where nothing is withdrawn for it, nor hurt by it, and where nothing can take part of its honour, nor usurp its throne, are its strength, and fairness, and price, and goodness in the sight of God to be truly estimated."

To the offices which, in such bleak and elevated situations, the pine performs, may be traced much of the beauty and fertility of the earth, and much even of the happiness of man. Standing on the mountain

tops, its fringed forests catch and condense the passing clouds, which distil from their branches into the shaded soil, and, percolating through moss and grass into the heart of the rocks, flow down by an appointed channel —a rejoicing stream into the valleys. The pine is, therefore, the earth's divining-rod, that discovers water in the thirsty desert,—the rod of Moses, that smites the barren rock, and causes the living fountain to gush forth. When the pine forests on the mountain heights are cut down, the springs and rivulets of the low grounds are exhausted, and the climate is rendered hotter and drier. The destruction of the grand pine-woods that once clothed the Apennines, has rendered the Papal States a region of poverty, disease, and wretchedness. In Greece the traveller looks in vain for the old legendary fountains, rivers, and lakes, with which the classic poets had made him familiar; the water-nymphs have vanished along with their sorrowing sisters the Dryads. Palestine has become a parched and sterile land, on account of the disforesting of its mountains and hills. Not more poetically than truthfully then did the old Chinese philosophers say, that "the mightiest rivers are cradled in the leaves of the pine." On the mountain heights, too, in the united strength of its serried phalanxes, the pine is a natural fascine or fortification against the ravages of the elements. The *ban forests* of Switzerland stay the progress of glaciers, and arrest the headlong fall of the avalanche, protecting the inhabitants of the valley from the fearful ice-bolts of the mountain. On the Norwegian hills, the pine forests wage successful war with the bitter winds of the Pole; and

in their sheltered rear the fruits of a milder climate ripen, and the toils of a happier land are carried on. Against the fierce storms of the Bay of Biscay, the pines of the Landes offer an effectual barrier; and meadows and pastures, forming the support of an industrious peasantry, now appear where sand-dunes once filled the air with their choking clouds, and spread desolation over the far horizon. The pine is, therefore, necessary to the equilibrium of nature. If ignorantly and wantonly removed from the situations where God has so wisely and graciously placed it, His beneficent arrangements for the good of man would be completely frustrated.

And most admirably has God endowed the pine with strength and capacities of endurance unequalled. Every part of its organization bears testimony to the favour with which He regards it. We see the presence and hear the voice of the Lord God amongst the pine trees—as amongst the trees of the garden of Eden. Each tree is aflame with Him as truly as was the burning bush. The peculiarities which attach to the tribe, in their manifest intention and actual result, plainly bespeak a plan or purpose in the mind of the Creator. The whole framework of each species is moulded to suit the unfavourable conditions amid which it grows. Its roots adapt themselves to the shallowness of the soil, which usually rests on very hard rocks; for, instead of going down vertically, like the roots of other trees, they extend more in a horizontal direction, under and over the ground, which they clasp with an intricate network of extremely strong knotted fibres, composed of thread-like cells.

They thus make up for want of depth in the soil by the extent of it which they embrace; and by this contrivance the trees are securely rooted, and capable of growing even in the bleakest situations—on the ledges of precipices, and on the most barren mountain heights. The trunk is protected from the keen cold to which it is exposed by the thickness and roughness of its bark, and by the resinous substances, richly productive of caloric, with which all its parts are strongly impregnated. And it is a remarkable circumstance that the bark is always thicker and rougher in the direction of the prevailing storms. On their northern sides the trees are also covered—on the same principle as Arctic animals are furnished with warm furs—with a thick coating of gray lichens; and a knowledge of this curious provision of nature has often been taken advantage of, as a compass to guide the lost wanderer through the pathless primæval forests.

The pyramidal form of the pine is also admirably adapted to its exposed and stormy haunts, as it gives less resistance to the force of the wind than the round, cushioned shapes of trees growing in sheltered places. It is besides designed to catch the falling snow, and by thus investing itself with an ermine robe during the severe and long-protracted frosts, to prevent the very rapid loss of heat which its dark verdure would otherwise occasion. It has, moreover, an æsthetic significance, reminding us of order in the midst of disorder, and formality in the midst of the rudest chaos. Its regular conical growth affords a pleasing contrast to the wildness and irregularity of the scenery in which it abounds, and introduces an element of education

and precision into those outer regions of Nature, that seem to have got beyond, or overgrown, her orderly control. Rising tall and straight, "in serene resistance, self-contained," from the rifts of inaccessible peaks; marshalled in stern and serried ranks on the ledges of perpendicular precipices; standing lonely and unawed—like the *Wettertannen* of the Swiss Alps—in the midst of fearful horizons of snow-mountain and glacier, over the far-off edges of which, where the sunshine lingers behind on the green uplands, the oak and the chestnut timidly peer, as if afraid to venture further: in such circumstances it speaks of law where all seems lawlessness, and of a conserving power where everything seems to yield to disintegration and ruin. Especially is the traveller struck with the formal educated look of the tree in the Araucarias that cover the wild slopes of the Chilian Andes, and in the Norfolk Island pines, whose branches, all of the same length, grow thickly out all round the trunk from the root to the top, appearing like stately columns resting on rifted rocks, perpetually dashed by the fierce spray of the Southern Ocean.

The leaves of plants which grow entirely under water are cut into long linear segments, in order that the flow of the stream may pass through them without injuring them; so in like manner the leaves of the pine tribe are exceedingly tough and narrow, in order that the wind may blow freely amongst them without separating them from the tree, or tearing them in pieces. In aërial as well as in aquatic currents, we find the same modification of form and structure in the organisms that grow in them. Though the leaves of the pine are thus

smaller and narrower than those of any other kind of tree, they are compensated for this by their immense number and persistent nature. They cling to the tree through summer's sun and winter's frost; and thus each branch bears upon it always the accumulated foliage of five or six summers. By this immense and continuous multiplication of leaf-surfaces, working day and night, summer and winter, those subtle processes by which, through the agency of the leaf, air, dew, and sunshine become changed into solid wood—are carried on more rapidly in the pine than in trees whose individual leaves are broader, but less numerous, and liable to the interruption of winter's desolation. No tree, for the reason above assigned, grows more rapidly than the pine; and, liable as it is to continual accidents, such a provision is necessary to make up for its losses, and to keep its ranks always unbroken on the guardian battlements and watch-towers of the world. Such modifications are strikingly expressive of ideas in the Creator's mind, embodiments of His thoughts and purposes. In studying these, "the secret of the Lord" is with us; and we are filled with a delightful awe, when we thus obtain fleeting glimpses of the personality of God, and see Him coming out from behind the veil of nature, and revealing Himself to us in schemes and contrivances, so like in kind to what we ourselves might, any of us, have devised, that we cannot help identifying them with mind and heart. By these wonderful modifications of form and structure, then, have the pine trees been planned to flourish on the barest soil, in the coldest atmosphere, on the stormiest heights. Noble Gothic spires, they tower

up in arborescent music to heaven, and carry up the religion of the landscape in unfading verdure, and unceasing fragrance, and untiring patience, to the throne of Him before whom the mountains and the hills break forth into singing, and all the trees of the field clap their hands.

Of this great order of trees, honoured of God to perform the most important services in the economy of nature, and more useful to man than any other kind, one group stands out in distinct and well-marked prominence. "The trees of the Lord," says the Psalmist, "are full of sap; the cedars which He hath planted." The cedars are indeed the trees of the Lord. They are especially His planting. There is a sense in which, above all other trees, they belong to Him, and shadow forth in a higher degree His glory. The peculiar expression of the text, however, must not be limited to one particular species of cedar. A careful examination of the several passages where the term occurs will convince us that it was used in a generic, and not in a specific sense. Qualities are ascribed to it which are not true of the cedar of Lebanon; and it is mentioned in connexion with localities where that tree could never have grown. Encouraged by this Scripture usage, I shall use the word in a somewhat wider sense than the conventional one, to denote three remarkable examples which may be selected from the *coniferæ* to show the power and wisdom of God as displayed in the trees of the forest. These are, the cedar of Lebanon, the cedar of the Himalayas, and the cedar of the Sierra Nevada. The epithet which the Psalmist applies to one, may most

appropriately be applied to all of them; and there are various reasons why the Lord may be said to have a special interest and property in each of them, to a few of which our attention may now be profitably directed.

1. They are "trees of the Lord" on account of the *peculiarities of their structure.* In common with all the pine tribe, they are exceptional in their organization. They reveal a new idea of the creative mind. They do not belong to either of the two great divisions of the vegetable kingdom. They are neither Phænogams, or flowering plants, nor Cryptogams, or flowerless plants. They form a separate order of vegetable life. As regards the internal structure of the stem, there is no distinction of woody and vascular tissue, as in other trees; the wood consisting entirely of an open, thin-walled network of cells, marked by large disc-like elliptical plates, which are so entirely characteristic of the pine family, that the smallest fragment under the microscope is sufficient to identify it with the utmost certainty. So far as their structure is concerned, therefore, the cedars occupy a lower position in the scale of organization than other trees; the cellular tissue which lies at the base of all plants being in their case developed only into longitudinal vessels, and stopping short of the higher form of woody and vascular tissue, into which it is differentiated in the palm and the oak. This conclusion is further confirmed by the venation of the cedar leaves. In common with the other members of the coniferæ, the veins branch but do not run together again. They are identically the same as those of the ferns, and

entirely different from those of the monocotyledonous and dicotyledonous plants. The leaves of the cedars do not show any venation, owing to their slender linear or needle-like shape; but there are several species of pine—created, one would suppose, for the very purpose of showing to us the true position of the coniferæ in the ranks of vegetation—that have broad leaves, in which the fern-like arrangement of the veins is seen in the most beautiful manner. The leaves of the Salisburia pine, for instance, are two or three inches broad; and if seen for the first time, apart from the tree, they would be at once referred to some species of fern. But there is still another evidence of the low rank of the cedars to be found in the simplicity of their reproductive system. Their fruit consists of an amentum, the pericarps of which, instead of enclosing the seeds, are imbricated woody scales, opening when ripe, and allowing these to fall out. In this respect the fructification resembles that of the club-mosses, which in this country creep in elegant wreaths over the ground for many yards among the heather, and bear their fruit in scaly spikes, with the seeds contained in receptacles hidden between the scales. There are several other points of alliance between pines and club-mosses, which it would lead me too far to notice. From what has been already said, we may fairly regard the cedars as both a connecting and an embryonic type. They are allied to the noblest flowering plants in the general structure of the wood, and in their arborescent form; they are allied to the noblest flowerless plants in the venation of their leaves, and in the simplicity of their structure and tissues. They combine the highest

appearance with the lowest structure, and are thus links binding together the two great orders of vegetation. In them we have an example among plants of a common principle in God's moral procedure towards His creatures, choosing the weak things of the world to confound the things which are mighty, and giving more abundant honour to that which lacked. Into the earthen vessel of the humble organization of the cedars He has poured the glory of the highest vegetable development, that the glory may be seen to be all His own. And in this wondrous combination of types in the "trees of the Lord" we have a dim foreshadowing of "Him who dwelt in the bush;" who united in Himself the highest and the lowest—God and man—in one person for ever; and who still, though in the midst of the throne, dwells with the man that is of an humble and contrite heart.

2. The cedars are "the trees of the Lord" on account of the *antiquity of their type.* It was of this class of trees that the pre-Adamite forests were principally composed. Every glimpse of woodland scenery which we obtain through the dim vistas of geological history reveals to us a background of conifers on the horizon. In every stratum in which arborescent fossils occur we can trace this antique tree-pattern. The cedars were the earliest planting in the newly-formed soil of the earth; the productions of the earth's "heroic age," when Nature seemed to delight in the fantastic exercise of power, and to exhibit her strength in the growth of vegetable giants and monsters. They have existed throughout all time, and have maintained their characteristic properties, extensive distribution, age,

and consistency of habit, throughout all the changes of the earth's surface. They form the evergreen link between the ages and the zones, growing now as they grew in the remote past, inhabiting the same latitudes and preserving the same appearances in bulk and figure. Universal in space, and universal in time, they are indeed monuments of the unchangeableness of the Ancient of Days—proofs indisputable that the vegetable kingdom did not commence as monads or vital points, but as organisms so noble and complicated, that even the most bigoted advocate of the development theory must admit that they could not have been formed by the agency of physical forces.

The pattern of these cedars is indeed an antique one. The cone is one of the oldest and best known mathematical figures. The inhabitants of ancient Nineveh and Babylon attached a mystical significance to it; for we find it occupying a most prominent place among the sacred symbols sculptured on their monuments. And as in human economy, so in the history of vegetation it is one of the oldest figures. The cedars, in all parts of their organization, are moulded according to this plan: from the seed to the perfect plant they exhibit a continued development of the same cone-like pattern. A wonderful unity runs throughout all their parts. The cotyledons, or first-springing leaves, of which there are from six to fifteen, are arranged in a conical form, and every node and internode exhibits the same mode of construction. The seed-vessels are called cones on account of their shape; and the very clusters or branches of stamens are made to assume the same form. Each part represents the other; and

from the commencement in the seed to the termination in the cone, we have in each organ a miniature of the whole tree. "A pine cone," as Dr. M'Cosh well observes, "will reward the study for hours together of the highest intellect."

The conical is the primitive form of all trees. During the earlier stages of their growth, they exhibit this appearance, developing only in the direction of the trunk, and putting forth few lateral branches. Gradually, as the tree grows older, the conical form is departed from, more branches are produced from the sides, these are allowed to grow horizontally and increase in size, until at last a beautiful rounded crown of wood and foliage is perfected, and the branches occupy almost as important and prominent a position in the appearance and economy of the tree as the trunk itself. The pine, however, preserves its conical shape throughout its whole existence. At every stage of growth the trunk is most conspicuous and all-important, and the branches entirely subsidiary. Indeed it produces but a very few of them, and these principally at the top; and numerous individuals may be found in thick woods and on solitary heights, where only one or two ragged branches cling to the stem. In relation to other trees, therefore, the pine at maturity, and all its life, is what they are in their earliest years. While they have outgrown their infant shape, it retains it permanently—continues through all the ages and the zones an eternal child—an undeveloped, overgrown forest infant. And wisely has nature kept it thus stunted in its organization—given it a giant's strength in an infant's form; for this infant's form

is the most firm and stable in the universe. It was bestowed upon the oak and the chestnut in their weak childhood, until they grew too large to need it. But the pine always needs it; and not otherwise could it possibly live in the bleak and stormy inheritance assigned to it. The Great Designer has constructed the mountain pine on the same strong enduring architectural plan, according to the same unerring principle of shape and strength, on which He has built the mountain itself. And, as some one has said, the avalanche that tears down the side of an alpine peak, carrying death and destruction in its train, receives its fearful momentum from the same law that detaches a withered leaf from the pine-bough, and carries it silently and gently to the golden needle-strewn heap at the foot of the tree. The avalanche and the faded pine-leaf both fall from cones; and thus the mightiest and the most minute processes of nature are carried on by the same simple laws, and the greatest and most magnificent objects are linked together by the same sublime and simple bond of unity.

During untold ages the cedars were the sole examples of forest vegetation. They afford an illustration of a general law of the deepest philosophic import, running throughout the whole geological history of the earth—the law, namely, that the first introduced animals or plants of any class have been *combining types;* that is, have united in themselves the characters of several families, now distinct and widely separated. "The trees of the Lord" stood as the prophetic representatives of the Cryptogam and the Phænogam, until these two ideas of the creative Mind were separately

and more distinctly expressed by the subsequent introduction of the typical forms of the two classes. In them Nature first sketched out her floral design, so to speak, in general terms, and then in after ages elaborated each subordinate idea—here, in the ascending scale, in the exogen and the endogen: there, in the descending scale, in the cryptogam. From the side, as it were, of those pre-Adamite cedars God took the ribs, of which He made the graceful palm-tree to yield its welcome shade and fruit in the thirsty desert, and the beautiful apple tree to clothe itself with its bridal dress of blossoms under the smiling, tearful skies of the northern spring: "wine that maketh glad the heart of man, and oil to make his face to shine, and bread which strengtheneth man's heart." And thus the endless diversity of the garden and the forest—the whole idea of that great work of art—was contained in the first strokes of the Artist's pencil in these "trees of the Lord;" and the ceaseless working of the Creator hitherto has been exercised only in the eternal unfolding of the original conception.

We burn the relics of extinct cedars in our household fires. Microscopic investigation proves that the plants of the coal formation were closely allied to this class. Many of the fossil trees belonging to this epoch were true pines; and the more characteristic Lepidodendrons and Sigillarias were intermediate between pines and club-mosses, though approaching more nearly the former, of which, in all probability, they were the earliest embryonic condition. And what a marvellous vista is opened up to us by this fact, between the human period and a geological past so remote that it

seems almost mythical. Innumerable ages before the heir of nature had been put into the garden of Eden to dress and keep it, "the trees of the Lord" were purifying the atmosphere, and rendering the earth a fit habitation for him, and by the same wonderful process storing up, in the vast quantities of carbon thus appropriated, a mechanical energy which, after a sleep of millions of years, was destined to rise again as the great physical regenerator of the human race.

3. The cedars are the "trees of the Lord," on account of the *majesty of their appearance.* Every one is familiar by description or observation with the cedar of Lebanon. It is the tree, *par excellence,* of the Bible—the type of all forest vegetation. Religion and poetry have sounded its praises so loudly and repeatedly that it has become the most renowned natural monument in the world. For untold ages it covered the rugged slopes of Lebanon with one continuous forest of verdure and fragrance, and formed its crowning "glory." The ravages of man, carried on century after century in the most ruthless manner, laid its proud honours low; and now only a few scattered groves survive amid the fastnesses of the highest valleys to tell of the splendour that had perished. But what a magnificent relic the one grove of Kedisha is! Each huge trunk, scarred and hoary with the elemental strife of hundreds of years, still spreads out its great gnarled boughs laden with emerald foliage and exquisite cones, "full of sap" in the freshness of undying youth, so that we cannot wonder at the superstition of the awe-struck Arabs, who attribute to the cedars not only a vegetative power which enables them to live eternally, but also

a wise instinct, an intelligent foresight, by means of which they understand the changes of the weather, and provide accordingly. No temple of nature can be grander than the interior of that grove, where the natives of the neighbouring villages celebrate mass annually in June. It is a spot unique on earth. The sacred associations of thousands of years crowd around one there. In the fragrance of the cedars comes up the richness of Bible memories; each sight and sound suggest some incident alluded to by psalmist or prophet, and a feeling of awe and reverence, such as few other scenes can inspire, fills the soul to overflowing. There, at an elevation of six thousand feet, with their roots firmly planted in the moraines of extinct glaciers, with their trunks riven and furrowed by lightnings, with the snows of Lebanon gleaming white through their dusky foliage, with the stillness of earth's mightiest powers asleep around them, who can fail to feel the force of the Psalmist's words, "The trees of the Lord are full of sap; the cedars of Lebanon, which He hath planted"?

Another tree equally majestic, though not equally celebrated, is the deodar. As the cedar is the glory of Lebanon, so the deodar is the glory of the Himalayas. The one is the sacred tree of the Jews; the other is the sacred tree of the Hindoos, its meaning being Deva-dara, or tree of God. The deodar grows on the slopes of the Nepaul and Thibet Alps, at an elevation of between ten thousand and twelve thousand feet, and frequently attains a height of one hundred and fifty feet, with a corresponding girth. It is a splendid tree, with its beautifully drooping branches,

rich glaucous-green foliage, and fragrant wood; and nothing can exceed the grandeur of its forests hanging on the precipitous sides of the highest mountains in the world, with luxuriant thickets of rhododendrons lighting up the green recesses with their gorgeous crimson flowers, and the snowy sky-piercing peaks, inaccessible to human foot, towering up in awful sublimity behind them. It is so closely allied to the cedar of Lebanon, that some botanists consider it to be merely a variety. There are three grand monarchs of the mountains—the *Cedrus Deodara* of the Himalayas, the *Cedrus Atlantica* of the Atlas range in North Africa, and the *Cedrus Libani* of Lebanon—which resemble each other so nearly that they may be considered varieties of the same species. It is a remarkable fact that they are all found in similar situations, being restricted absolutely to the moraines of extinct glaciers. The Indian cedar is associated with the grandest glacier phenomena to be seen in the whole world. Not only does it flourish upon the mounds produced by glaciers, but, near the spots where it grows, large fossils of antelopes, rhinoceroses, and other tropical fauna are found, thus proving that, within a very modern period—a period closely trenching upon the time when man made his appearance upon the earth—the Himalaya mountains had been thrown up into the sky to a height of eight thousand or ten thousand feet. Of these wonderful cosmical changes, the majestic "trees of the Lord" were in all probability witnesses; and, planted amid the wreck of the volcano and the glacier, surrounded by the sublimest earthly objects, they may well awaken the

veneration not only of the superstitious Hindoo, but of every thoughtful mind.

But of all the cedars the most magnificent is the *Sequoia gigantea*, of the Sierra Nevada. Sixteen years ago, a hunter was led by the chase, late in the afternoon, to a secluded spot in a forest at a height of four thousand feet on the western slope of this great range. The sight which then presented itself to him almost paralysed him with awe and amazement. Enormous dark-red trunks, between eighty and a hundred feet in circumference, rose up like great circular watch-towers between three and four hundred feet into the air, dwarfing all the surrounding forest, their tops glowing in the golden lustre of the setting sun, while the last beams had passed away from the dusky pines below them. Like one enchanted, he hastened to proclaim the discovery, but was not believed, until repeated visits and measurements had familiarized the world with the astounding fact. The bark of one of the trees, called the "Mother of the Forest," ninety-three feet in circumference, and three hundred and twenty feet high, was stripped off to the height of one hundred and ten feet, and was set up in the Crystal Palace at Sydenham, where, until destroyed by the recent disastrous fire, it gave the spectator a good idea of the colossal size of the parent trunk. The tree called the "Father of the Forest," lies prostrate, half buried in the ground, as it fell centuries ago. It is a most stupendous ruin, measuring in girth at the base one hundred and twelve feet, and supposed to have been originally four hundred and fifty feet high. The inside of the trunk is hollowed out by fire,

and you can walk through the lofty charred vault for upwards of two hundred feet with your hat on, and emerge at last from a knot-hole. One of the largest members of this family-group was cut down some years ago after an arduous steady labour of six weeks, and its stump now forms the floor of a ball-room. The colossal trees number altogether about a hundred, standing within an area of about fifty acres, intermingled with giant pines, which appear slender saplings beside them. Although the tree flourishes in rich luxuriance wherever it is planted by the hand of man, it is confined in the natural order of things to three isolated spots in the Sierra Nevada, about fifty miles apart. One of the groves near the head-quarters of the Tuolomne, at a height of six thousand feet, contains about four hundred trees. Another grove, said to number three hundred trees, lies in the Mariposa valley. But the grandest and most impressive in its character is that which was first discovered in the Calaveros valley, about one hundred and fifty miles east of San Francisco. Not a single tree of the kind is known to exist anywhere else in a state of nature; it has never spread from its limited area; and what is very remarkable is, that several of the living trees, between two and three thousand years old, have been found to be planted astride of other trunks, entirely covered by the gradual deposit of centuries of falling leaves and cones. The wood of these ancient progenitors of the present giants, for such they manifestly are, is almost black, and has a dry metallic sound. "It is evident," says Bayard Taylor, who records this circumstance, "that eight, or perhaps ten thousand

years have elapsed since this race of trees first appeared on the earth." One is perfectly bewildered by the reflections which this mammoth grove suggests. Older than the pyramids, its immemorial trees are equally sphinx-like in their mystery. The secrets of an irrecoverable past are whispered by every breeze that sighs through their branches. Could they speak, as in Jotham's parable of the trees, what revelations would they give us of that mysterious race which inhabited California and Mexico before the Deluge, and whose remains are found in the loneliest recesses of the forest, and in the sculptured ruins of Copan, Palanque, and Uxmal; what stories would they tell us of the various Indian tribes, that in slow succession for thousands of years lit their fires against their trunks, and wantonly injured what they were too rude to reverence! Largest and oldest of living organisms, they are indeed the offspring of the earth's fresh green prime, when everything was on a gigantic scale, and Megatheriums and Mastodons roamed through Brobdingnagian forests. They seem relics of "the reign of the gymnosperms," a fragment of the ancient carboniferous epoch preserved in this lonely solitude amid all the cosmical changes elsewhere going on, keeping, in their annual rings of wood, the imperishable record of their growth, while human races and dynasties sprang up and perished around them. And still, though the shadows of forty centuries are sleeping under their boughs, their vital processes are as active as ever, they exhibit no signs of what can be regarded physiologically as old age. And in all this what a striking illustration do they give of that precious Bible promise,

"As the days of a tree are the days of my people." Like the indestructible cedars, chosen of God Himself for the most sacred purposes, for the construction of the holy places, and as emblems of the holy people, Israel still exists, though a remnant scattered and peeled; and just as the "trees of the Lord," though naturally confined to a few isolated spots, are now being planted by the hand of man over all the continents of the earth, so the "people of the Lord" shall also, by human instrumentality in conversion, send out their boughs unto the sea and their branches unto the river; the branch of God's planting, the work of His hands, that He may be glorified. "Instead of the thorn shall come up the fir tree, and instead of the brier shall come up the myrtle tree; and it shall be to the Lord for a name, for an everlasting sign that shall not be cut off."

CHAPTER V.

CORN.

"*Thou preparest them corn, when Thou hast so provided for it.*"—
PSALM lxv. 9.

THE harvest-time is the most delightful of all the seasons of the year. It is the time of fulfilled hopes and realized expectations, when the ruddy gleam of the ripened fruit succeeds the lavish wealth of blossoms, and he who went forth weeping, bearing precious seed, returns with rejoicing, bringing his sheaves with him. Some one has called it the sunset of the year; and assuredly no greater halo of glory marks the close of day than radiates around each sunny hour of this precious season. Scenes of life and beauty crowd upon each other with a seeming rapidity as if there was no time to lose, each rendered more engaging by its very changeableness, and by the forecast of that desolation in which it will soon terminate. Days, and even in this capricious climate, sometimes weeks, succeed each other, so perfect in their character of beauty, that they seem almost revelations of a higher existence, and merely to live is a sufficient happiness. The sky that broods over the landscape is of the sweetest blue, and is fraught with an unut-

terable peace; soft playful gleams breaking through the fleecy clouds flit over wood and meadow, and give a tenderer tone to the universal sunshine. The white homesteads nestling on the hill-sides are still and noiseless in the broad shadows of the trees that cluster round them, and that are just beginning to be tinged with the bright hues of decay; and so pure and serene is the air that the moon is seen like a pale phantom at mid-day, and the faintest far-off sounds are heard with surprising distinctness. The lowing of cattle and the bleating of sheep come from the crimson moorlands mellowed to an indescribable pathos of loneliness; and down in the valleys the tinkling of the scythes and the voices of the labourers seem like sounds from another world. An ideal air breathes around every object within the horizon; and the universal frame of nature is stamped with the brightest image of its Maker, and earth might well be taken for a suburb of heaven.

Of all the many beautiful sights of this season, the most beautiful and interesting are the corn-fields rippling in light and shade, like the waves of a sunset sea, away over valley and upland to the purple shores of the distant hills. They are the characteristic features of the season—the illuminated initials on Nature's autumnal page, whose golden splendour is variegated here and there with wreaths of scarlet poppies, corn blue-bottles, and purple vetches. The landscape seems to exist solely for them, so prominent and important are they in it. Wherever they appear they are the pictures for which the rest of the scenery, however grand or beautiful, is but the mere frame. The earth

looks like a table spread for this precious food which God's own hand has furnished. A hungry world, whose staff of life the corn forms, waits impatiently for the feast; and Nature, like a handmaid, seems to pause in her varied operations, and to concentrate all her energies upon the one task of bringing it to perfection. Familiar as it is to us, we greet it season after season with the same fresh enthusiasm. We enter fully into the old feeling which glowed in the great child-heart of Luther, when he returned home through the rich harvest-fields of Leipsic, "How it stands, that yellow corn, on its fair taper stems; its golden head bent, all rich and waving there! The mute earth, at God's kind bidding, has produced it once again—man's bread." The meanest and homeliest scene is redeemed and hallowed by the presence of the corn-fields in it. It is holy ground; God has there made the place of His feet glorious. The old miracle of the multiplication of the loaves has been there performed anew, in a more gradual and less startling manner indeed, but not the less wonderful on that account. In the one case the processes of germination and development were suspended, and in a single moment a mere morsel became a sufficiency for thousands; in the other case the processes of nature were allowed to go on over weeks and months until the single grains deposited in the earth became a waving harvest. The miracle of the loaves was a sudden putting forth of God's bountiful hand from behind the veil of His ordinary providence; the miracle of the harvest is the working of the same bountiful hand, only unseen, giving power to the tiny grains to drink the dew and

imbibe the sunshine, and appropriate the nourishment of the soil during the long bright days of summer. I understand the one miracle in the light of the other. That marvellous scene in the wilderness of Capernaum comes to me as a revelation of a real but invisible world which is working silently day after day around me in this lonely Highland strath. It serves to open my eyes to wonders more vast and awful than its own outward phenomena. Paradoxical as it may seem, it teaches me to look with more reverence upon the ordinary ways of God's providence, and to receive with even more of deep thankfulness the bread that comes to me by what are called the common processes of nature, than if it had been given to me directly by the hand of Jesus with no toil or trust of my own.

No one can gaze upon these golden corn-fields without being influenced more or less by the pleasing associations with which they are connected. They strike their roots deep down into the soil of time; they are as old as the human race. They waved upon the earth long before the flood, under the husbandry of the "world's grey fathers." The sun in heaven has ripened more than six thousand of them. Progress is the law of nature, and everything else obeys it, but the harvest-field exhibits little or no change. It presents nearly the same picture in this Western clime and in these modern days as it did under the glowing skies of the East in the time of the patriarchs. We see the same old familiar scene now enacted under our eyes in every walk we take, which Ruth saw when she gleaned after her kinsman's reapers in one of the quiet valleys

of Bethlehem, or which our blessed Saviour so frequently gazed upon when wandering with His disciples in the mellow afternoon around the verdant shores of Gennesaret. The harvest-fields are the golden links that connect the ages and the zones, and associate together the most distant times and the remotest nations in one common bond of sympathy and dependence. They make of the earth one great home; of the human race one great family; and of God the universal Parent, to whom day after day we are encouraged to go with filial faith and love, not in selfishness and isolation, but in a fraternal spirit which embraces the whole world, asking not for ourselves only, but for all our brothers of mankind as well—"OUR Father, which art in heaven, give US this day our daily bread."

The most interesting and delightful association which the harvest recalls is its connexion with the great world-covenant. It stands imperishably associated with that memorable summer evening after the Flood, when Noah stood beside an altar of burnt-offering, and through the smoke of the sacrifice floating calmly upwards, and the misty exhalations rising from the still reeking soil, and the dark thunder-clouds melting and brightening in the unfamiliar sunshine, a rainbow was seen to span the sky with its brilliant arch, as God's signature to a new charter re-establishing the peace and order of nature, which had been so long and fearfully disturbed by the Flood. We can imagine no position more terrible in its loneliness and insecurity than that of Noah and his family at this time. They stood amid the wreck and desolation of the world—the sole survivors of the human race—uncertain whether

the awful catastrophe from which they had so miraculously escaped might not occur again, and, therefore, naturally hesitating to cultivate the soil, or to provide for anything beyond the most pressing wants of the passing moment. In such a state of mind God graciously reassured them, and dispelled their fears and forebodings by a direct interposition. He entered into a new covenant with them as the representatives of the human family, and consecrated the rainbow, the offspring of the storm which had destroyed the world, as the emblem and attestation of the covenant to all generations. And now, whenever we see that gorgeous blossom of light expanding its seven-coloured petals from the dark bosom of the cloud, we know that the storm, however long-continued and violent, will not always last; that the waters of Noah will no more go over the earth; that seed-time and *harvest*, cold and heat, day and night, summer and winter, will never cease. It was a beautiful superstition which maintained that wherever the glittering feet of the rainbow rested, there a hidden treasure would be discovered. This fable contained more of reality than we are apt to suppose. It is true that those who foolishly set out in quest of this hidden treasure wandered far and found only fairy gold, a glow of beauty that vanished ever and anon the nearer they approached it. But where the magic hues lay, there the dull soil brightened into fruitfulness, and golden harvests, the only true riches in the world, spring up and reward him who seeks wealth not in idle superstitious wanderings, but by steady, trustful industry in those spots where the feet of the bow of promise touch the earth.

Our corn-fields grow and ripen securely under that covenant-arch, whose key-stone is in the heavens, and whose foundations are upon the earth. They afford to us the most striking evidence, season after season, of the integrity and stability of the covenant-promise. Never once has the pledge, given four thousand years ago, been violated. Never once in the whole course of post-diluvial history, has the divine bow spanned a scene of total desolation and death. Never once has the real treasure been absent from the places where its feet rested; if not found within one horizon, it was sure to be found within another. Dearths and famines, grievous and long-continued, have occurred again and again, but never simultaneously over the whole world. While one region suffered from the effects of blight, or storm, or drought, favourable conditions developed an abundant harvest in another region. Canaan was reduced to a howling wilderness; but there was corn in Egypt, though the application of this compensation was sometimes rendered difficult by natural or moral obstructions. But whether the harvest be local or general, whether we be dependent upon the produce of our own fields or upon the surplus supplies of commerce, in either case it is to the covenant faithfulness of God that we are indebted for the blessing.

We are not accustomed, perhaps, to think of our harvests in this light. We are apt to regard them as things of course, as a necessary and inevitable part of the constitution of nature, coming to us as the natural result of our own toil and the proper reward of our own industry. But it is well for us that they are

secured by a higher law than the mere order of nature, seeing how much depends upon them. Human life now-a-days is so complicated, the relations of trade and manufactures in this country are so extensive and intricate, the proportion of the population directly engaged in agricultural pursuits is comparatively so small, that we lose sight to a great extent of the primary all-importance of the harvest. Amid the wealth and luxuries procured in other ways, we fancy that we could subsist without it. We lay out roads and railways, we build ships and factories, we manufacture all kinds of useful and ornamental articles, we institute banks and insurance societies, and we say in the pride of our hearts with the fool in the parable, "Thou hast much goods laid up for many years, eat, drink, and be merry," forgetting that all these things are the potential means of wealth, and not the wealth itself, and have no direct relation whatever to the indispensable necessaries of life. We toil and pinch and economize for years to secure a fortune or a competency; we have a feverish longing and impatience to obtain that imaginary elysium, an independence built upon the world's riches. But a single unfavourable season will render all our efforts nugatory, and prove to us how precarious is the independence of the most independent. Well has it been said that as we approach the season of harvest we are within a month or two of absolute starvation The barrel of meal is nearly exhausted, and no new supply can be obtained except from the fields that are slowly ripening under the patient heavens. Were the winds permitted to thrash these fields, or the mildew to blight them, or the caterpillar to devour them, or

the rain or the drought to prevent the ear from filling and ripening, not all the vast revenues and resources of England would avail to stay the terrible consequences. The rich and the poor, the needy and the independent, would be overwhelmed with a common ruin. All the other riches in the world—its coal, iron, gold, and jewels, failing the riches of our golden harvest fields, were as worthless as the dust beneath our feet. It is not, therefore, without reason that I refer to the uniform stability of nature and the security of our annual harvests as one of the most remarkable evidences of God's faithfulness to His covenant engagement. And while external Nature thus declares that, long for independence and pursue it with our whole heart as we may, we cannot be truly independent—she encourages us to place more implicit trust in God's great harvest-covenant; and on the strength of that engagement to offer up continually, so long as the world endures, our morning supplication, "Give us this day our daily bread." The promise of God is the arch of the covenant rainbow; the fourth petition is the basis upon which it rests; and the structure of faith that is built upon God's promise and our prayer, is more enduring than any fabric of independence that man can construct for himself out of the silver and gold, wood, hay, and stubble, of the world.

Corn is the special gift of God to man. There are several interesting and instructive ideas connected with this view of it. All the other plants we use as food are unfit for this purpose in their natural condition, and require to have their nutritious qualities developed, and their natures and forms to a certain extent changed

by a gradual process of cultivation. There is not a single useful plant grown in our gardens and fields but is utterly worthless for food in its normal or wild state; and man has been left to himself to find out, slowly and painfully, how to convert these crudities of nature into nutritious vegetables. But it is not so with corn. It has from the very beginning been an abnormal production. God gave it to Adam, we have every reason to believe, in the same perfect state of preparation for food in which we find it at the present day. It was made expressly for man, and given directly into his hands. "Behold," says the Creator, "I have given you every herb bearing seed which is upon the face of all the earth,"—that is, all the cereal plants, such as corn, wheat, barley, rice, maize, &c., whose peculiar distinction and characteristic it is to produce seed; "and to every beast of the earth, and to every creeping thing, and to every fowl of the air, I have given every green herb for meat,"—that is, all the species of grass and succulent plants whose nutritious qualities reside chiefly in the stems and foliage. The Word of God plainly tells us this, and nature affords a remarkable corroboration of it. We cannot regard it as an accidental, but, on the contrary, as a striking providential circumstance, that the corn-plants were utterly unknown throughout all the geological periods. Not the slightest trace or vestige of them occurs in any of the strata of the earth, until we come to the most recent formations, contemporaneous with man. They are exclusively and characteristically plants of the human epoch; their remains are found only in deposits near the surface, which belong to the

existing order of physical conditions. They were ushered upon the scene in the company of those labiate and rosaceous plants, whose beauty, fragrance, or fruitfulness, were especially fitted to minister to the wants of a rational creature. The testimony of geology, therefore, confirms unequivocally the testimony of revelation, and shows that corn was not only specially created for man's use, but was also got ready specially for the appointed hour of his appearance on earth. A table was spread for him in the wilderness by God's own hands, richly furnished with the finest of the wheat, and adorned with wreaths of roses and luscious fruits, and rendered fragrant with mint and spikenard and frankincense.

There is another proof that corn was created expressly for man's use in the fact that it has never been found in a wild state. The primitive types from which all our other esculent plants were derived are still to be found in a state of nature in this or in other countries. The wild beet and cabbage still grow on our sea-shores; the crab-apple and the sloe, the savage parents of our luscious pippins and plums, are still found among the trees of the wood: but where are the original types of our corn-plants? Where are the wild grasses which, according to some authors, the cumulative processes of agriculture, carried on through successive ages, have developed into corn, wheat, and barley? Much has been written, and many experiments have been tried, to determine the natural origin of these cereals, but every effort has hitherto proved in vain. Reports have again and again been circulated that corn and wheat have been found growing wild in

some parts of Persia and the steppes of Tartary, apparently far from the influence of cultivation; but when tested by botanical data, these reports have turned out in every instance to be unfounded. Corn has never been known as anything else than a cultivated plant. The oldest records speak of it exclusively as such. Wheat grains have been found wrapped up in the cerements of Egyptian mummies, which were old before history began, identical in every respect with the same variety which the farmer sows at the present day. Charred fragments of bread, and large quantities of carbonized barley and other grain, have been dug out from beneath the alluvial deposits of the Swiss and Italian lakes, where the lacustrine dwellings of a singular people stood at the very least two thousand years before the Christian era. And at the present day, to the wild and roving savage in the uttermost parts of the earth, corn is known only in a state of cultivation. History and observation prove that it cannot grow spontaneously. It is never, like other plants, self-sown and self-diffused. Neglected of men, it speedily disappears and becomes extinct. It does not return, as do all other cultivated varieties of plants, to a natural condition, and so become worthless as food, but utterly perishes, being constitutionally unfitted to maintain the struggle for existence with the aboriginal vegetation of the soil. All this proves that it must have been produced miraculously, or, in other words, given by God to man directly in the same abnormal condition in which it now appears; for nature never could have developed or preserved it. In the mythologies of all the ancient nations it was

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confidently affirmed to have had a supernatural origin. The Greeks and Romans believed it to be the gift of the goddess Ceres, who taught her son, Triptolemus, to cultivate and distribute it over the earth, and from her the whole class of plants received the name of cereals, which they now bear. And we only express the same truth when we say to Him whom these pagans ignorantly worshipped,—"Thou preparest them corn when Thou hast so provided for it."

Let me bring forward one more proof of special design, enabling us to recognise the hand of God in this mercy. Corn is universally diffused. It is almost the only species of plant which is capable of growing everywhere, in almost every soil, in almost any situation. In some form or other, adapted to the various modifications of climate and physical conditions which occur in different countries, it is spread over an area of the earth's surface as extensive as the occupancy of the human race. From the bleak inhospitable wastes of Lapland to the burning plains of Central India, from the muddy swamps of China to the billowy prairies of America, from the level of the sea-shore to the lofty valleys and table lands of the Andes and Himalayas, it is successfully cultivated. The emigrant clears the primeval forest of Canada or the fern-brakes of New Zealand, and there the corn seed sown will spring up as luxuriantly as on the old loved fields of home. The heather that he brings with him from his native hills may refuse to grow in the one place, and the pine from Scottish woods may dwindle and fade in the other, but the catholic corn will reward his industry with the old abundant harvest, and surround

his home in the wilderness, with pictures of nature so like those of the land he has left, that exile is robbed of half its sting. Rice is grown in tropical countries where periodical rains and inundations followed by excessive heat occur, and furnishes the chief article of diet for the largest proportion of the human race. Wheat will not thrive in hot climates, but flourishes all over the temperate zone at various ranges of elevation, and is admirably adapted to the wants of highly civilized communities. Maize spreads over an immense geographical area in the New World, where it has been known from time immemorial, and formed a principal element of that Indian civilization which surprised the Spaniards in Mexico and Peru. Barley is cultivated in those parts of Europe and Asia where the soil and climate are not adapted for wheat; while oats and rye extend far into the bleak north, and disappear only from those desolate Arctic regions where man cannot exist in his social capacity. By these striking adaptations of different varieties of grain, containing the same essential ingredients, to different soils and climates, Providence has furnished the indispensable food for the sustenance of the human race throughout the whole habitable globe; and all nations, and tribes, and tongues can rejoice together as one great family with the joy of harvest.

Corn, as the German botanist, Von Meyer, says, precedes all civilization; with it is connected rest, peace, and domestic happiness, of which the wandering savage knows nothing. In order to rear it nations must take possession of certain lands; and when their

existence is thus firmly established, improvements in manners and customs speedily follow. They are no longer inclined for bloody wars, but fight only to defend the fields from which they derive their support. Corn is the food most convenient and most suitable for man in a social state. It is only by the careful cultivation of it that a country becomes capable of permanently supporting a dense population. All other kinds of food are precarious, and cannot be stored up for any length of time; roots and fruits are soon exhausted, the produce of the chase is uncertain, and, if hard pressed, ceases to yield a supply. In some countries the pith of the sago palm, the fruit of the bread-fruit tree, the root of the esculent fern, or the lowly fungus, lichen, or sea-weed, supplied spontaneously by nature, serve to maintain a thinly-scattered and easily-satisfied population; but man in these rude circumstances is invariably found greatly depraved in body and mind, and hopelessly incapable of bettering his condition. But the cultivation of corn, while it furnishes him with a supply of food for the greater part of the year, imposes upon him certain labours and restraints which have a most beneficial influence upon his character and habits.

The various species of wild grasses allied to corn grow spontaneously without manure or culture on the pampas of America, the steppes of the Kirghiz, and the high pasturages of the Alps. "He maketh grass to grow upon the mountains," to feed those dumb, helpless animals that can "neither sow nor reap." The wild grass is self-sustaining, self-diffusing. It is *perennial*, propagating itself year after year

and century after century with unfailing certainty. Prevented from flowering and seeding by the close cropping of animals, nevertheless, by the wise compensation of buds or lateral shoots, it is perpetuated, and made more abundant and luxuriant. But it is not so with the corn. It is an *annual* plant. It cannot be propagated in any other way than by seed, and when it has yielded its harvest it dies down and rots in the ground; self-sown, it will gradually dwindle away, and at last disappear altogether. "It can only be reared permanently by being sown by man's own hand, and in ground which man's own hand has tilled."* God gave it to him, in truth, on the express stipulation that in the sweat of his brow he should eat bread. The earth does not bring forth double harvests; a larger portion of its surface is now cultivated than in former times, and by the improvements in agriculture, two stalks of corn are now made to grow where only one grew before, but an increasing population has kept pace with the increasing supply, and there is after all no excess of food. The covenant promise bears this law of nature upon the very face of it,—plainly intimates that while there shall ever be an annual supply of corn, there shall ever be an annual necessity for it. If seed-time and harvest shall never cease, that surely implies that the annual harvest of the world will only suffice for the world's annual food. It is true, indeed, that in Egypt the

* For a most interesting monograph on this subject, see Professor Harvey's recently published work, "Man's Place and Bread Unique in Nature."

produce of seven plentiful years was stored up for seven years of famine. But this was an abnormal state of things, divinely appointed for a special purpose, and occurring only once in the history of mankind. In ordinary circumstances nature does not permit such a storing of corn, but imperatively demands that regularly, year after year, we sow our fields and reap our harvests. "It is not probable that there was ever a year and a half's supply of the first necessary of life at one time in the world," and "that starvation, which is often within a day's march of countless multitudes of the human family, is once a year within a month of them all." And wisely has this been ordered; well has it been so arranged, that the terms upon which individuals and nations hold their lease of life are unremitting labour from year to year, for much wickedness is thus prevented which idleness would be sure to produce; much discipline is thus afforded for powers of body and mind which would otherwise rest in inglorious ease, or be destroyed by vice. Man, as a tiller of the soil, as a cultivator of corn—the bountiful and special gift to him of his Maker—while he ministers thereby to his bodily wants, raises himself in the scale of intelligence, exalts and purifies his intellectual and moral nature; and in being a husbandman, becomes a little lower than the angels, crowned with glory and honour. And in having year after year to sow and reap his fields, and in thus having his daily bread measured out to him, and his daily bread only, he is taught in the most impressive way the solemn lesson of his entire dependence upon

God. "Thou visitest the earth and waterest it. Thou preparest them corn when Thou hast so provided for it. Thou crownest the year with thy goodness, and thy paths drop fatness. The pastures are clothed with flocks; the valleys also are covered over with corn; they shout for joy, they also sing."

CHAPTER VI.

BLASTING AND MILDEW.

"I smote you with blasting and with mildew and with hail in all the labours of your hands."—HAGGAI ii. 17.

SUMMER'S viewless boundary is past. The warmer tints and softer outlines of the landscape; the brightening, through decay, of the sombre green night of the foliage, like a strange dawn upbreaking through the earth; the deepening calm of the blue skies, and the shortening beauty of the mellow eves,—all indicate that the year has reached its golden summit, and that henceforth its course must be down the western sunset slopes in bleakness and shadow. The air is filled with a tender sentiment of sadness, which makes the hectic beauty of all things more touching. Nature now empties her cornucopia of fruits, for the reign of the flowers is over. Only a few late autumn ones linger lovingly on the spots, where a fragile sisterhood of beauty marked the long summer hours by the opening and the closing of their petals. The blue-bells toll their "Angelus" on the wayside banks; the heather-blossoms blush at their own loveliness on the lonely moorlands; and all the upland pastures are strewn thick with myriads of the purple scabious, the earth's last efforts to remember the fair skies of June. A new

class of objects is now ushered upon the scene. In the open glades of the woods, and in hidden nooks in the fields, the mushroom tribe begin to appear, first as solitary spies—the advanced guard of a large army of invaders, destined for a brief season to carry everything before them. True as the stork and the swallow to their appointed time, they come as harbingers of decay and prophets of desolation. Kept in check by the luxuriant growth and overflowing, energetic life of summer,—prevented from germinating by the dryness of the air, and the heat and light of the sun, they now take advantage of the feebler powers of vegetation, and the damper and milder atmosphere, to put forth their own claims to a share of the common earth. The conditions that bring decay and death to other plants are highly favourable to them; and while the flowers are fading and the leaves falling, under the operation of a new, inexplicable law, they are rejoicing in the possession of the fullest life and vigour. Where the shade is deepest, and the soil most impregnated with the products of corruption, they love, gipsy-like, to pitch their tents; and very picturesque they look when seen in the dim green light of these silent haunts. In every wood may be found a whole "Divina Commedia" of mushroom forms, more fantastic than the weird human forest which Dante saw in the invisible world. They are plants in masquerade. The functions of vegetable nature are reversed in these fungi. In their appearance and structure they resemble animals. Their substance is nitrogenous like flesh, and their pores inhale oxygen, and exhale carbonic gas like animals. They are in the vegetable kingdom what zoophytes are in the

animal. As the sea-anemone reminds us of the wind-flower in the woods, so the mushroom reminds us of the jelly-fish in the sea; and these connecting links between the creatures of two different elements, prove the harmony of creation and the unity of the Creator. Although bred only from the decay of higher organisms, these mushrooms are not without their own beauty of shape and colour. Their uncomely parts have frequently more abundant comeliness. In no class of plants are more vivid tints of orange and crimson, scarlet and purple, to be found; while the exquisite contour of their caps, and the delicate carvings of their ivory gills and stems, might form studies for any painter. The splendour of their colouring is in fine harmony with the solemn sunset of the year; and in the flames of crimson fungi, purple flowers, and brilliant autumn woods, Nature yields up her life as on a gorgeous funeral pyre.

Very useful and important are these fungi in the world's busy household. They are working at "chemical problems which have puzzled a Liebig and a Lavoisier," converting the noxious products of corruption into comely forms and nutritious substances, absorbing into living tissues effete matters, which are fast hastening downwards to join the dark night of chaos and death. Parasites, most of them, upon dead plants, they economize the gases which would otherwise escape into the atmosphere and pollute it; and conserve, for the use of nobler forms, the subtle forces of life which would otherwise pass unprofitably into the mineral kingdom. It is one of the strangest things in the world, when we think seriously of it, to

see a vigorous life-full cluster of fungi springing, phœnix-like, from a dead tree, exhausted of all its juices, bleached by the sun and rain of many summers, and ready to crumble into dust at the slightest touch. Death is, indeed, here a new birth, and the grave a cradle. It is one of Nature's many analogies of the human resurrection. But the resemblance is superficial and incomplete. The common analogies of the corn-seed and the larva of the butterfly, imply a development from a lower to a higher form of life through the medium of death; but in the case before us it is a process of degradation that takes place. The higher organism decays, and rises again in the form of a lower organism. The majestic oak of centuries appears in the mushroom that, like Jonah's gourd, springs up in a night, and perishes in a night. Not thus shall it be in the resurrection of the just. "It is sown in corruption; it is raised in incorruption." "It is sown a natural body, it is raised a spiritual body." From the precious ashes shall rise up, not a body of sin and death like this, but a glorious body fashioned like unto Christ's, without spot or wrinkle, or any such thing. There may, indeed, be some likeness, in the autumnal resurrection of plants in fungi, to the resurrection of the wicked—the *second death;* for in this case it will not be a transformation from dishonour to glory, but a ceaseless retrogression from corruption to a deeper corruption still; a dead life on earth, producing an everlasting death-life in the world beyond the grave.

Wisely have the fungi been provided, in the rapidity of their growth, the simplicity of their structure, the

variety of their forms, and their amazing numbers, for their appointed task in the economy of nature. Not a leaf that falls from the bough, not a blade that withers on the lea, but is seized by the tiny fangs of some special fungus organized to prey upon it; not a spot of earth can we examine, where vegetable life is capable of growing, but we shall find a vegetable as well as an insect parasite, keeping its growth in check, hastening its decay, and preserving its remains from being wasted. Out of the eater, too, cometh forth meat. The fungi raise from the lower soil nitrogenous substances, which, strewed on the surface by quick decay, form food for higher plants than themselves. The spawn of the mushrooms, which cause the mysterious fairy-rings in our meadows, both consume putrescent organized matter and manure the land. To the insect world, all the species yield an inexhaustible store of nourishment; and though some kinds are virulently poisonous, yet a large number are highly useful to man. In many places on the Continent, they constitute the staple article of food among the poorer classes, during the summer and autumn months. In this country, strange to say, they are sadly neglected; and while God is now showering this manna with lavish profusion around the dwellings of the poor, and offering it to them without money and without price, they leave it thanklessly to rot on the ground, or turn from it with loathing, longing for flesh-pots which the plague has placed beyond their reach.

In carrying out the wise and gracious purposes for which they have been designed, the fungi not unfrequently overstep the limits of usefulness, and commit

wholesale destruction. Like the storm that is intended to purify the air, and in so doing incidentally destroys life and property, the fungi are intended to hasten decay, and limit the injurious influence of putrescent matters; but in so doing they are not unfrequently the occasion of blight and famine. They purify man's atmosphere, but they also destroy man's food. If their ravages could be confined to useless plants; if they were employed solely in reducing weeds to decay, they would be welcomed by man as among his greatest helps and blessings. But nature knows no straight, arbitrary line of demarcation, such as we draw, between what is useless and what is useful. To every natural good there is a recoil of evil. The fungi are indiscriminate in their attacks. They seize upon the corn which strengthens man's heart, as readily as upon the thorns and briers which cause him to eat his bread in the sweat of his brow. The law impressed upon them is to help in reducing all organic nature to its ultimate elements; and in obeying this law, they know no respect of persons or things, no will save that of Him "whose tender mercies are over all His works." In this aspect they may be numbered, along with thorns and briers, among the disorders of the original beauty of creation, the various impediments to the earth's bringing forth the needful sustenance for man. In this our fallen condition, we must always count upon the blasting and the mildew; upon the years to be eaten by the locust, the canker-worm, the caterpillar, and the palmer-worm, as surely as upon the covenant faithfulness of Him who promised that seed-time and harvest would never cease, and to whom we

are encouraged to offer up the daily petition, "Give us this day our daily bread." Nature with reference to nature completely accomplishes her purposes; but nature with reference to man is not a perfect means to an end. There is a want of adjustment between him and his dwelling-place; he has to work within a machinery to which he is imperfectly adapted. Sin is the cause of this want of harmony. It has thrown everything out of gear, and subjected the creature to vanity. All the blights and storms from which man suffers, are but the echoes in the natural world of the mischiefs wrought by sin in the spiritual. Every phase of the evil within man finds some reflection in the evil without him; and everywhere we see a groaning and travailing world, full of labour and sorrow, because full of sin and guilt. This is the gracious purpose of the Creator, in order that man may be conformed to His will and moulded to His image by the discipline of suffering. Blasting and mildew, thorns and briers, had no place in the Divine ideal of a pure and holy world; they will have no place in the restored Eden from which sin, and therefore its *shadows*, have been banished.

Blasting and mildew were very frequent in Bible lands and times. Along with war and pestilence, they were the most common judgments inflicted by God upon His ungrateful and rebellious people. He says again and again by the mouth of His prophets, "I smote you with blasting and mildew in all the labours of your hands, yet ye turned not to me." So terrible were the ravages committed by these scourges, so sudden their appearance, so rapid their progress, so

mysterious their origin and cause, that they were universally regarded not merely as a visitation of God, but as a *special product of God's creative power*. The cause and the effect were confounded. Fear prevented the Israelites from investigating the nature of the phenomenon. That it was divinely produced was sufficient for them. Since that time, men have tried to find out, in secondary causes, the *rationale* of the pestilence that so long walked in darkness. It was natural to seek in occult regions for the explanation of an occult mystery; and, therefore, it was attributed to meteoric influences, to lunar eclipses, to certain combinations of the planets. Modern science has given the true interpretation of the riddle. Blasting and mildew are now conclusively ascertained to be produced by *plants*—to be the diseases occasioned by the growth of minute fungi. Ever since plants have existed, these vegetable parasites have preyed upon them. They appear in greater or less abundance every year. They are fostered into excessive growth by certain favourable conditions of soil and climate, and checked in their development by certain unfavourable conditions. They are not extraordinary or exceptional phenomena of Nature, but the commonplace every-day products of her laws. They are not special creations of God, but the ordinary growths of the vegetable kingdom. And in the part which they took in the ancient Divine judgments, the only thing that could be regarded as supernatural or miraculous, was their extraordinary development and sudden appearance in immediate connexion with the Divine threatenings. In ordinary circumstances they

were produced in small quantity, and were so greatly restricted in their ravages as to be scarcely noticed; but when employed by God to accomplish His designs upon the children of Israel, they were so augmented in quantity, and so unrestrained in their ravages, that they gave rise to famine or death. It has been said, that every step gained by science is a contraction of the miraculous; that as the one advances, the other must recede. This applies to the superstitious interpretation of nature, but not to the miraculous element in God's Word. As science advances superstition retires, and the phenomena attributed to supernatural causes are found to have been produced by the operation of physical law. But the miracles of the Bible are untouched by this principle. The advancement of science may limit their extent, but cannot explain away their nature; may tell us that some of their modes and circumstances were natural, but cannot disenchant our minds of the belief in the special connexion of Omnipotence with them. It may teach us the *economy* of miracles, but it cannot persuade us of their unreality and impossibility. While miracles have a natural body, as it were, they have a divine soul. While God employs the objects of nature already existing, instead of creating new ones, to be the ministers of His moral purposes, He transforms and transfigures them in so doing, invests them with attributes which they do not naturally possess, or uses them in an abnormal way; and thus, though the means themselves are not divine, yet the agency by which they are made effectual is divine. The blasting and mildew that of old ravaged the fields of the

Israelites, were caused by an extraordinary growth of fungi; they were natural instrumentalities employed in accordance with nature; but they were true miracles notwithstanding,—true judgments of God, foretold in connexion with certain sins, and inflicted as the special punishments of these sins at the very time threatened. The very fact that the progress of science makes us to see more and more of the natural in the supernatural, ought also, by parity of reasoning, to lead us to see more of the supernatural in the natural; to see the miracle of the loaves and fishes in the growth of the waving harvest from the handful of seed, and the miracle of Cana of Galilee in the changing of the summer dews and rains in the vineyard into wine; and thus a true and perfect science will ever teach us that the ordinary and the extraordinary, the natural and the miraculous, are but different phases as it were of the same Omnipotence which, paradoxical as it may seem, has power to alter, just because from the very first it left nothing that needed altering.

A brief glance at the nature of the fungi concerned in the production of blasting and mildew may be interesting and instructive. It will introduce many to an unknown world of minute existences, unnoticed amid the great bustling world of sense and sight, but very wonderful to those who have learned to reverence not merely the size of things, but the wisdom of their idea. It will teach us the needful lesson, that nothing is so weak and small that the strength and the wisdom of God cannot accomplish great ends by its instrumentality. It will reveal to us the astounding fact, that

we are living in the very midst of organic forces possessed of incalculable powers of harm, which may at any time be let loose and overwhelm us, and ought, therefore, to excite in us a deep sense of our helplessness and dependence. There are four diseases in corn produced by fungi—recognised in the popular language of the farm as *smut, bunt, rust,* and *mildew.* Sometimes one, and sometimes another predominates; but there are few fields where they may not all be found in some degree. Every one who has attentively examined a corn-field about the beginning of July, when the ear is protruding through the sheath, must have noticed here and there a black head among the green ones, covered with a soot-like dust, which comes away freely, and stains the hands. This disease has been long and widely known among farmers under the name of smut, or dust-brand; but it is only recently that its true nature has been ascertained. Under the microscope the black powder is found to consist of a collection of spores, or round seed-cases, containing sporules or seeds in their interior. It is, therefore, not a mass of diseased cells, as was formerly supposed, which obviously would not germinate, but a parasitic plant—a true fungus, capable of reproducing and extending itself indefinitely. Hence botanists have given it the name of *Ustilago segetum.* The seed-vessels in this plant are exceedingly minute. One square inch of surface contains no less than eight millions; and if the seed-vessels be so small, what must the seeds themselves be! The highest power of the microscope is only capable of resolving them into an impalpable powder. Myriads of seeds are shed from the smutted ears long before the corn is ripe, and

dispersed into the air, and over the fields,—most of them to die, a few of them to reappear next summer with the grain upon which they are parasitic. When germinating, this fungus first attacks the interior portions of the flower, and renders them abortive. It then seizes upon the little stalks of the florets, and causes them to swell and become fleshy. At length it consumes all the reproductive organs, and converts the whole nutritious grain into vile dust and ashes: thus affording a striking analogy of that transmutation which the seed of eternal life undergoes, in the case of those to whom it becomes a savour of death unto death.

Another species of "blasting," more destructive, and therefore more dreaded, is known to the farmer under the name of *bunt*, and to the botanist as *Ustilago fœtida*, on account of the intolerable odour, like that of putrid fish, which it exhales. It is one of the most common diseases to which wheat is subject. Scarcely a field is free from its attacks; and in favourable circumstances it spreads widely and proves very destructive. It confines its ravages entirely to the grain. Externally, the infected ear presents no abnormal appearance. There is no black dust, no stunted growth or malformation, by which the presence of the insidious foe may be recognised. On the contrary, the infected ears continue growing, and appear even plumper, and of a richer and darker green, than the sound ones. The very stigmata of the flowers remain unaltered to the last. Stealthily and secretly the process of poisoning is accomplished; and not, in many cases, till the harvest is reaped, and

the wheat ground for flour, is the discovery made, by the odour and colour, that the produce is unfit for human food. Under this external mask of health, all fecundation is rendered impossible; there is no development of the parts of fructification; no embryo whatever can be detected; the whole interior of the seed when broken or bruised is found to be filled with a black, fetid powder, which contains, on chemical analysis, an acrid oil, putrid gluten, charcoal, phosphoric acid, phosphate of ammonia, and magnesia, but no traces of starch, the essential ingredient in human food. Under a high power of the microscope, this powder consists of a mass of round spores or seed-vessels, considerably larger than those of smut; and, instead of being plain and smooth, as in that species, their surface is beautifully reticulated. They are also mixed with a number of delicate branched threads, called the mycelium, or spawn. The seeds contained in the spore-cases are of a greasy, oily nature, and consequently adhere to the skin of the sound grains, so that the disease may be propagated at any time by inoculation or contagion. One grain of wheat contains upwards of four millions of spores; but the number of seeds contained in these is beyond calculation. When bunted wheat is ground accidentally with healthy flour, it gives it an exceedingly nauseous taste, and is no doubt injurious to the health in proportion to the quantity introduced.

Another species of "blasting" is known to farmers as *rust* or *red-robin*. It is called by botanists *Trichobasis rubigo-vera*. It is rare to find any wheat-field altogether free from it at any season of the year, and

it is sometimes so abundant, that a person passing among the stalks is completely painted with its rusty powder. It is found upon the wheat-plant at all stages of growth. Early in the spring it attacks the young blades; later in the season it breaks out on the glumes and paleæ of the ear even after the grain is formed. So long as it is confined to the leaf, it is comparatively harmless. The grain continues to swell in spite of it, and though the flag seems to droop and wear a sear and yellow tint, a few bright sunshiny days, by drying up the moisture in which it luxuriates, will arrest its progress, and restore the healthy greenness of the crop. A long continuance of warm damp weather will cause it to propagate itself to a serious extent, and in the end the quality and quantity of both grain and straw will be very much deteriorated. Strange to say, although in this country the least alarming of all the blights of the wheat, it is the most common and the most dreaded on the Continent, where the settled sunshine which is so inimical to its growth seems naturalized in the atmosphere. In appearance the corn-rust is a mere patch of reddish-yellow powder, bursting like an eruption through the skin of the leaves and culms of the growing corn. Its microscopic character is somewhat different from that of bunt and smut. Its spores grow from a mycelium or spawn-thread like bunt; but, unlike that species, they are furnished at their base with a short thread-like footstalk, attaching them to their matrix, which at length falls away. They are exceedingly beautiful, delicate objects, and will amply reward the most careful microscopic investigation.

The fourth species of blight which I shall mention is *mildew.* This term is very vague and unsatisfactory. By the Hebrews it was employed in the most general sense, to designate all the diseases of vegetables caused by fungi, and often included very different plants. In modern times the term is hardly better understood. It represents no definite idea, or a very different idea to different individuals. The farmer, the vine-grower, the hop-cultivator, the gardener, the housewife, apply it indiscriminately to the effect produced by different species, and even genera, of fungi upon the objects of their care. Speaking with scientific accuracy, the term "mildew" should be restricted to that disease of corn which is caused by the fungus known to botanists as the *Puccinia graminis.* It is derived from the Saxon words *Mehl-thau,* meaning *meal-dew.* Although familiar to the tiller of the soil from the earliest ages, it is only since the beginning of this century that its true character as a vegetable parasite has been known. Previously it was regarded simply as a meteorological product, or a diseased appearance of the corn itself. It makes its appearance in the corn-fields in May or June, and first takes possession of the lower green leaves, which become sickly, and break out through the skin which rises round them in blisters, into rusty patches, as though the corn-stalk had been powdered with red ochre. Examined under the microscope, these red patches resolve themselves into dense masses of round one-celled spores, rising from the midst of delicate branched threads, which insinuate themselves in a complete network amongst the cells of the diseased leaf. At this stage of growth, mildew presents

so close a resemblance to rust that it is regarded by some as a mere form of it. A month or two later, however, it presents some differences. Not only is it more abundant than before, but it changes its colour gradually from a rusty red to a deep brown tint, and under the microscope its spores become pear-shaped, each tapering gradually into a stalk—and also two-celled, each cell filled with granular contents. Finally, when the corn is nearly or fully ripe, the straw and the culm are profusely streaked with blackish spots, ranging in length from a minute dot to an inch. This is the fully developed mildew, and, once seen, is not likely to be mistaken for anything else. It is very common on all the cereals grown in this country, and also on many of the grasses, and often proves very injurious. Its effect seems to be to intercept the sap intended to nourish the grain, which, consequently, becomes shrivelled and deficient in nutritive matter, yielding a superabundance of inferior bran. When the fungus is abundant, a field which promises well in the blossoming time, grievously disappoints the farmer in the harvest and the threshing season; the reason of the deficit being often wrapped up in mystery to him.

Such are the blights which affect the cereal crops in this country. They occur on all parts of the plants infested. One is found on the straw; another on the leaves and chaff; a third attacks the flower, and a fourth the grain. At no stage of growth is the wheat-plant free from some species or other. Season after season, as regularly as the corn grows, so regularly do these parasitic fungi appear with it. They have

become at certain periods epidemic, like the plagues and pestilences in human history. They have repeatedly caused famines in our own and in other countries. In this form they were familiar to the Jews and the Romans of old, and were common in the Middle Ages. And though now, owing to an improved system of agriculture, they seldom inflict widespread suffering, yet they have become chronic, and every season duly levy a lighter or a heavier tax upon the produce of the fields—without any hope of its being repealed. The geographical range of these parasites is co-extensive with that of the corn. They have followed the march of cultivation into the wilderness; and wherever new ground has been broken up for the growth of human bread, there they have sprung up though unknown before. On the virgin soils of new colonies, they spread with the same rapidity as on the exhausted fields of old countries. They are perfectly naturalized amid the fern-brakes of New Zealand, and in the clearings in the primeval forests of Canada. They are found conspiring with the inhospitable climate, against the scanty produce which the Peruvian peasant wrings from the lofty table-lands of the Andes; and the Laplander regards their presence with dread amid the pitiable rye-fields, which struggle into existence on the borders of the Polar ocean. Every species of cereal has a parasitic fungus of its own. The maize, or Indian corn of the New World, is attacked by a virulent smut called *Ustilago Maydis;* a kind of bunt commits great ravages among the fields of Sorghum or durra, a grain extensively grown in Africa and Asia. Rice and millet are

infested with several kinds of smut and rust, which occasionally prove very destructive. Thus, everywhere these insidious parasites, possessing the power of indefinite extension and localisation, lie in wait to frustrate the goodness which is crowning the year, and to disappoint the hopes of the harvest.

The cereals, however, are not the only food plants which are exposed to the attacks of blasting and mildew. Not a single plant which man cultivates, but is the prey of some species or other of fungus. The produce of the garden and the field, luxuries and necessaries, are destroyed and polluted by these vegetable harpies. Some plants are more susceptible than others, having no less than a dozen parasites; but on every cultivated plant two or three species establish themselves. Onions, cabbages, turnips, beetroot, peas, spinach, gourds, in short all the green crops we raise, often suffer severely from this scourge. In wet seasons and damp localities they spread like wildfire, and destroy everything before them. Leprous mildews of different species are now and then fearfully fatal to the coffee plantations of Ceylon, the orange groves of St. Michael, the olive woods in the south of Europe, the mulberry-trees of Syria and China, and the cotton-fields of India. The leaves of these different plants, upon the produce of which the welfare and industry of whole provinces depend, are clothed on such occasions literally with sackcloth and ashes. Vegetable epidemics have raged with fearful violence over our fields and gardens. The hop, the vine, the potato, the peach have been nearly extirpated by the Oïdium and the Botrytis; and their cultivation is still

rendered exceedingly precarious in wet seasons from the same cause. All the horrors of famine followed in some places in the wake of these epidemics, and the violent commotions which they stirred up in society have not yet subsided. The fungi concerned in these wide-spread plagues are different from those of the cereal group. They are called moulds, and consist of a web of delicate threads, penetrating the tissue of the plants on which they grow, and producing clusters of little jointed stalks bearing oval-shaped fruit. A lovelier spectacle than these moulds present under the microscope it is impossible to conceive. No language can give an adequate idea of the forests of crystalline vegetation, with their transparent trunks and their wildering mazes of exquisite flowers and beadlike fruit, growing in snowy purity on a fragment of potato-leaf or a small bit of decayed grape-skin. One can gaze at them unweariedly for hours, marvelling at the inexhaustible fulness of glory which God must possess, when He can afford to lavish so much of it on objects so mean and insignificant. Beauty such as theirs—beauty nowise essential to the performance of their functions—is surely the stamp of God upon all the works of His hands, by which we recognise their excellency and perfection.

All these blights and mildews on the corn-crops and the green-crops may well be called by God, "My great army." Individually minute and insignificant, by the sheer force of untold numbers they are mightier for harm than storms and earthquakes. They have been fearfully and wonderfully made for their dread work. No less than four kinds of fructi-

fication—spores, acrospores, zoospores, oospores—have been discovered on the same plant, each capable of reproducing it. When one mode fails, another is developed to take its place, so that absolute failure, even in the most unfavourable circumstances, is almost impossible. The germs produced by these different kinds of fructification are of various sizes and different powers of germination, so that, when a large-sized seed fails to find a lodgment in the pores and cells of plants, a smaller one is sure to succeed; and the conditions that prevent the growth of one kind of seed will prove favourable to another. Thus armed at all points, provided against all emergencies, the seeds of these moulds and mildews go forth on their work of destruction. They are produced, besides, in incalculable myriads. On one individual mould upwards of ten millions of spores have been counted. One acre of mildewed wheat will produce seeds sufficient to inoculate the whole of the wheat of the United Kingdom. The atmosphere is charged to an inconceivable extent with them; the soil of every field is sown thick with them. Almost every grain of corn, or wheat, or barley, from the finest samples, is found, under the microscope, to have one or more seeds adhering to its husk. They effect an entrance either through the roots or by the stomata or breathing-pores of the plants they infest; and hardly ever can these organs perform their functions of inhalation or assimilation, without taking in from the atmosphere or the soil one or more of these sporules. It is indeed a fortunate circumstance that they refuse to grow generally except in stagnant, ill-drained places, and

under peculiar conditions of warmth and moisture; for otherwise if, quick with life as they are, they were to germinate wherever they alighted, the fig-tree would not blossom, and there would be no fruit in the vines, the labour of the olive would fail, and the fields would yield no meat.

Solemn thoughts in the summer season arise in my mind, as I go out, like Isaac, to meditate in the fields at eventide. I see a rich table preparing for a hungry world in the presence of innumerable enemies. I see Ormuzd and Ahriman—the powers of light and darkness—contending for the harvest; the sunshine and the breeze quickening and ripening it, and baleful parasites lying in wait under the shadow of the dark cloud to convert its milk into poison. I seem to see, in every dark head of smut and bunt among the corn, the vision of the black horse of the third seal, and its rider, holding the balances in his hand, proclaiming, "A measure of wheat for a penny, and three measures of barley for a penny." It appears to me that God's design in allowing these black fungoid ears to spring up year after year among the healthy crop, is just to show us the "hidings of His power;" to show us how easily, if it so pleased Him, He could let loose these destructive agencies to break the staff of bread and cover the land with desolation and woe. And when I find that, as the season advances, these ominous heralds of famine disappear, and the golden harvest fills, in all the beauty and fulness of its promise, the emerald cup of the hills, I seem to hear the voice of the Merciful One, in the midst of the four living creatures symbolical of creation, restraining the

ravages of the black horse, and saying to its blasting and mildew, "See that ye hurt not the oil and the wine." The destroying angel, whose waft is famine, the tremor of whose plume is death, folds his wings and stays his hand now, as of yore, by the threshing-floor of Araunah. And there, where the plague has been stayed and the shadow of famine dispersed, let us rear an altar; and, besought by the mercies of God, dedicate the threshing instruments and the first-fruits, and yield ourselves a living sacrifice unto the great Husbandman. And thus we shall fear no blasting or mildew; bread shall be given to us; goodness and mercy will follow us all the days of our life; and we shall at last rejoice in the great harvest-home of heaven, and shall hunger no more, for the Lamb that is in the midst of the throne shall feed us.

CHAPTER VII.

THE LEAF.

"*These are the generations of the heavens and of the earth when they were created, in the day that the Lord God made the earth and the heavens, and every plant of the field before it was in the earth, and every herb of the field before it grew.*"—GENESIS ii. 4, 5.

ALTHOUGH Science is usually represented as tearing the poetical veil from the face of Nature, and reducing all her wonderful facts to dry mathematical formulas, yet there are instances in which it has been greatly indebted to the inspiration of poetry. One of the most beautiful scientific generalizations was the result, not of the patient, persevering researches of the naturalist, but of the dreamy reverie of a poet. On the meditative mind of Goethe on one occasion dawned the bright idea, that the flower of a plant is not, as is commonly supposed, an added or separate organ, but only the highest development, or rather transformation of its leaves,—that all the parts of a plant, from the seed to the blossom, are mere modifications of a leaf. This idea, at first, was founded on no observations of nature, or accumulation of facts; it was laughed at by scientific men as the dream of one ignorant of science; and even by the kindred mind of Schiller it was regarded simply as a poetical fancy, though he acknow-

ledged its beauty and ingenuity. But as time wore on, it began to attract more reverent attention; it was found to be a clear exposition of a somewhat hazy presentiment of the great Linnæus, and of a theory, long buried in neglect, first propounded by Wolff. Thus recommended by scientific authority, men began to study it anew in the light of nature's own revelations, and soon became convinced of its scientific value. Jussieu and De Candolle, the eminent French botanists, gave their unqualified assent to it; and now the poetry of the idea is lost sight of in its prosaic reality, and it is taught as a fundamental and all-essential truth in every text-book of vegetable physiology. The beneficial effects which it produced upon the study of natural history it is impossible to over-estimate. It created a complete revolution in the science of botany, changing it from a mass of confused and discordant facts into a highly compact and symmetrical system. It furnished a proper basis upon which a solid and accurate theory of the vegetable kingdom could be constructed. It supplied the key of explanation for the occurrence of all those singular metamorphoses which plants undergo, and which were formerly utterly inexplicable. It lies at the root of the arts of agriculture and horticulture; for without the law involved in it, the simple wild plants of nature could not possibly be converted into the magnificent double flowers of our gardens, and the useful products of our fields.

This one idea has done more to lift the veil of mystery from nature, and to interpret the plans and purposes of the Creator, than all the previous labours

of botanists. It shows us order in the midst of confusion; simplicity in the midst of apparently inextricable complexity; unity of plan amid endless diversity of form. We read that there are nearly two hundred thousand different species of plants; and we are bewildered at the thought of the countless varieties of hue, form, and size, which such a vast host must exhibit. We see around us in every walk we take innumerable specimens of vegetation, from the moss on the wall to the majestic oak-tree, displaying every possible diversity of structure and appearance, and we are lost in amazement at the inexhaustible riches of the Infinite Mind. But when we realize the fact that one principle of construction pervades all this array of independent organisms; that the leaf-form and the leaf-structure are the primitive models from which all this complexity has originated, we obtain the clue which guides us easily through the labyrinth, and makes us wonder at its simplicity. Thoreau, watching the leafy expansions of frost-vegetation on the window-pane and on the blades of grass, declared that "the Maker of this earth but patented a leaf." He traced the leaf-pattern throughout all the kingdoms of Nature. He saw it in the brilliant feathers of birds; in the lustrous wings of insects; in the pearly scales of fishes; in the blue-veined palm of the human hand; and in the ivory shell of the human ear. The earth itself, according to him, is but a vast leaf veined with silver rivers and streams, with irregularities of surface formed by mountains and valleys, and varied tints of green in forest and field, and great bright spaces of sea and

lake. This, however, is a mere transcendental idea when thus applied to all the departments of nature; it is scientific truth only when confined to the vegetable kingdom. But *the unity of which it speaks* may be traced everywhere. All the recent discoveries of science, both as regards the forms and the forces of matter, have an obvious tendency to simplify greatly the scheme of nature, and reduce its phenomena to the operation of a few simple laws; and in this respect they have a profound theological significance. Amid these brilliant generalizations, we cannot stop short until we have reached the highest and sublimest generalization, and nature has led us by such great altar-steps up to nature's God. I cannot help regarding all systems of classification, based upon the great types of nature—whatever may be the religious views of their authors—as unconscious prophecies of the living and true God, as instinctive yearnings and gropings by the light of nature after the Great First Cause; and when species are arranged under genera, and genera under orders, and orders under one great division, I must regard the system as incomplete, unless the next logical step be taken, and this division in its turn be placed under the supreme kingdom, where all lines of life converge—of Him who is God over all, blessed for ever. An infidel naturalist, according to this idea, is one who shrinks from the inevitable inference of his own premises, and is therefore one of the most illogical and inconsequent of all men.

The theory of the leaf, as lying at the basis of the vegetable kingdom, requires more particular explana-

tion. All plants are produced from seeds or buds; the one free, the other attached; the one spreading the plant geographically, the other increasing its individual size. Carefully examined, the seed, or starting-point in the life of a plant, is composed of a leaf rolled tight, and altered in tissue and contents, so as to suit its new requirements. The real character of a seed may be seen in the germination of a bean, when the two leaves of which it is composed appear in the fleshy lobes or cotyledons which first rise above ground, and afford nourishment to the embryo. The bud, or epitome of the plant, which is physiologically co-ordinate with the seed, is also found to consist of leaves folded in a peculiar manner, and covered with tough leathery scales to protect them from the winter's cold; and in spring it evolves the stem, leaves, and fruit,—in short, every structure which comes of the seed. By some the stem is regarded as an essentially distinct and typical part, but the study of plants in which it departs from the normal form, will clearly indicate its foliaceous origin. The leaf here is made to assume a columnar shape, strengthened at the joints and nodes for the support of the superstructure, and elevated above the ground, in order to expose all the organs which it bears most thoroughly to the quickening influence of sun and air. Instances of the resolution of the stem into a rolled and compressed leaf may be seen in grasses and bulbous plants, whose stems are, visibly composed of sheathing leaves. In plants that are altogether destitute of ordinary leaves, or which shed them at an early period, and remain ever after naked, the stems serve all the purposes of

leaves. In the cactus tribe, the whole plant consists of jointed leaves, and in the common Butcher's Broom of our own country the stem becomes foliaceous—that is, flattened and leaf-like. Stems produce buds and flowers—so do leaves—as, for instance, those of the Bryophyllum. Indeed every leaf is a modified branch, and its toothed or serrated edges correspond with the nodes of the stem.

Further, all the appendages borne on the stem—such as scales, leaves, bracts, flowers, and fruit—are modifications of this one common type. Flowers, the glory of the vegetable world, are merely leaves, arranged so as to protect the vital organs within them, and coloured so as to attract insects to scatter the fertilizing pollen, and to reflect or absorb the light and heat of the sun for ripening the seed. Stamens and pistils may be converted by the skill of the gardener into petals, and the blossoms so produced are called double, and are, therefore, necessarily barren. The wild rose, for example, has only a single corolla; but when cultivated in rich soil, its numerous yellow stamens are changed into the red leaves of the full-blown cabbage rose. That all the parts of the flower, the calyx, corolla, stamens, and pistils, are modified leaves, is proved by the fact that it is by no means uncommon for a plant to produce leaves instead of them. There is a monstrosity to which the garden rose is occasionally liable, in which the stamens and pistils are converted into *green leaves*, and the plant begins to develop stem and foliage from the bosom of the petals, just as though the blossom were not the culminating point, but merely a stage in

its growth. We can see the whole gradual process of the metamorphosis of the common leaf into all the floral organs, most beautifully displayed in the normal flower of the common water-lily. The outermost circle of petals is greenish, approaching the herbaceous texture and colour of the calyx; the next circles are purer and more succulent; and the innermost ones are snowy white, entirely cellular, and, strange to say, begin to show rudiments of anther at their points. Gradually the petals become smaller and narrower, while the anthers on their summits become more distinct, until at last the usual thread-like filaments and golden, dusty anthers of perfect stamens, appear in the very heart of the flower.

We come next to the fruit, which, in all its astonishing varieties of texture, colour, and shape, is also a modified leaf; and it is one of the most interesting studies in natural history, to trace the correspondence between the different parts of structures so greatly altered and the original type. In the peach, for instance, the stone is the upper skin of a leaf hardened so as to protect the kernel or seed; the pulp is the cellular tissue of a leaf expanded and endowed with nutritive properties for the sustenance of the embryo plant; and the beautiful downy skin on the outside is the lower cuticle of the leaf with a sun-bloom upon it, the hollow line on one side of the fruit marking the union between the two edges of the leaf. So also in the apple; the parchment-like core is the upper surface of the leaf, and the flesh is the cellular tissue greatly swollen; in the orange, the juicy lips enclosing the seeds are the different sections of

the leaf developed in an extraordinary manner; while through the transparent skin of the ripe gooseberry, we see the ramifications of the leaf-veins, conclusively proving its origin. In all the parts and organs of the plant then, from the seed to the fruit, we have found that the leaf is the type or pattern after which they have been constructed; and those modifications of structure, colour, and composition, which they exhibit, are for special purposes in the economy of the plant in the first place, and ultimately for necessary services to the animal creation, and even to man himself, to whom the sweetness of the fruit and the beauty of the flower must have had reference, in the gracious intentions of Him who created them both.

On the leaf itself may be read, as unmistakeably as on a printed page, its morphological significance. As the architect draws on a chart the plan of a building, so the Divine Artist has engraved on the leaf the plan of the organism, of which it is the only essential typical appendage. Each leaf in shape and formation may be regarded as a miniature picture, a model of the whole plant on which it grows. The outline of a tree in full summer foliage may be seen represented in the outline of any one of its leaves; the uniform cellular tissue which composes the flat surface of the leaf being equivalent to the round irregular mass of the foliage. In fact, the green cells which clothe the veins of the leaf, and fill up all its interspaces, may be regarded as the analogues of the green leaves which clothe the branches of the tree; and although the leaf be in one plane, there are many trees, such as the beech, whose foliage, when looked at from a certain point

of view, is also seen to be in one plane. Tall pyramidal trees have narrow leaves, as we see in the needles of the pine; while wide-spreading trees, on the other hand, have broad leaves, as may be observed in those of the elm or sycamore. In every case the correspondence between the shape of the individual leaf and the whole mass of the foliage is remarkably exact, even in the minutest particulars, and cannot fail to strike with wonder every one who notices it for the first time. Examining the leaf more carefully, we find that the fibrous veins which ramify over its surface, bear a close resemblance to the ramification of the trunk and branches of the parent tree; they are both given off at the same angles, and are so precisely alike in their complexity or simplicity, that from a single leaf we can predicate with the utmost certainty the appearance of the whole tree from which it fell, just as the skilful anatomist can construct in imagination, from a single bone or tooth, the whole animal organism of which it formed a part. Each tree has its own peculiar leaf venation, corresponding to the peculiar arrangement of its own branches; and Dr. M'Cosh, in his "Typical Forms," has pointed out a very interesting example of the astonishing precision with which the most trivial specialities of the one are repeated in the other, in the case of the common beech, whose stems take a turn at every node at which they send off a branch, the mid-rib of the leaf having a similar zigzag appearance. It has further been remarked that trees which are feathered with branches down to the ground, have leaves with very short footstalks; while trees that

have long naked trunks have leaves with lengthened footstalks, as may be clearly seen in the correspondence between the bare, gracefully-tapering stem of the aspen, and its remarkably long petioles, causing that perpetual trembling of the foliage, even in the calmest air, of which poetry and superstition have made so much. Not only in trees, but also in shrubs, grasses, and all herbaceous plants, we find the same typical correspondence between the leaf and the whole plant; we find the plant-pattern repeated in the leaf-pattern. Every individual plant furnishes a special illustration of it; and in some instances the resemblance is very extraordinary, placing it beyond doubt that it is intentional and not accidental—design, and not mere coincidence. The study of such curious homologies is full of interest and delight to every thoughtful mind. It gives a charm to the woods and fields, over and above that which the beauty of their forms and colours, or the richness of their fragrance, produces. The pleasure is not merely sensuous, but intellectual; not only æsthetic, but religious. He who understands the typology of plants, finds an eloquent tongue in every leaf, and a suggestive sermon in every tree and flower. He walks among continual and delightful surprises, and never wearies even in the most monotonous scene; at every step he is arrested by some new proof of his heavenly Father's wisdom, which leads his mind out into far-reaching vistas of thought. The works of the Lord are sought out by him, because he has pleasure therein. He sees Him who is the Invisible, walking among the trees of the garden, and conversing with him by means of leafy

types, just as he conversed with the Hebrews of old, by means of Bible types. Considering the lilies how they grow, and finding that all the "garments for glory and beauty," in which these floral high priests, that daily send up the incense of their fragrance to heaven, are arrayed, have been designed by God himself, and woven in the same loom—he is taught an impressive lesson of trust and faith. From the type in the plant he ascends, in meditation, by the line of unity in form and structure which runs throughout the whole vegetable kingdom, to "Him who dwelt in the bush," and who is the antitype to whom all the types of nature and revelation point and with reverent and awe-struck heart whispers to himself, "I have heard of thee by the hearing of the ear, but now mine eye seeth thee."

In connexion with this general typical character of the leaf may be viewed its particular typical significance, as representing the three great classes into which the vegetable kingdom has been divided. That it is possible to determine from the leaf alone, or even from the smallest fragment of it, what position to assign to any given plant in our systems of classification, is surely owing to the fact, that the plan of the leaf is the basis upon which all vegetation, as a distinct kind of life, has been constructed. Classifying plants according to the veins of their leaves, we find that there are three great types of venation, each characterising one great order, and each of paramount importance, as indicating the internal formation of the stem, and, indeed, the structure of the whole organism. If we examine the leaf of the elm or the strawberry,

we notice that a principal vein, which is a continuation of the stalk, runs through the centre, dividing it into two equal parts; and from this mid-rib several primary veins branch out on either side towards the edges, which in their turn divide into smaller ones, until the whole surface of the leaf exhibits a perfect network of fibres. This arrangement of veins is beautifully seen in leaves whose green tissue has been eaten by insects, or altered by decay, or which have been converted into skeletons by artificial means. Slight differences occur in different plants; the veins in the leaf of the common chestnut-tree, for instance, proceeding in nearly straight lines from the mid-rib to the margin; whereas the leaves of most plants of the same class exhibit a very tortuous and intricate venation; and in the vine, the currant, and the geranium, several equal veins spring from the base of the leaf, instead of the single prominent one which is usually the case. But with these and similar slight variations, the peculiarity of this kind of leaf is, that its veins branch all over the surface and form a fibrous network; so that, if torn, its parts separate in an irregular manner with a jagged edge. Now this type of leaf belongs to the great class of plants called exogens or dicotyledons. It is indicative of the highest development of vegetable life. The complicated nature of the leaf is typical of the complicated structure of all the parts of the plant. The seed has two lobes; the stem has concentric circles of wood and bark, and medullary rays, and increases in diameter by age; and its appendages, in the shape of branches, leaves, blossoms, and fruit, are numerous and highly developed. Whenever, therefore, we see a

leaf with branched veins, we may be sure that it belongs to the most perfect type of vegetation. If, on the other hand, we examine the leaf of a grass, a lily, or a palm-tree, we find that the veins run parallel to each other on the surface without branching or interlacing, so that it can be torn from base to apex in a regular manner along the course of any of the veins. This arrangement of leaf-venation is characteristic of the endogens or monocotyledons; and its simplicity is typical of the comparatively simple structure of the whole class. The seed has only one cotyledon; the stem is unbranched; the foliage is large in proportion to the size of the plant, but scanty; the flowers few and simple; and the wood has no rings, no separable bark—but consists of pith or cellular tissue, with little bundles of fibre placed irregularly throughout it, and most abundantly towards the circumference. Besides the leaves of these outside and inside growers, we have another type of leaf in what is called the cryptogamic or flowerless order of plants, comprehending ferns, mosses, and sea-weeds. The herbaceous parts of those plants, properly speaking, are not true leaves, though closely resembling them in shape and colour. Differing widely in several important structural and functional particulars, they have received the special name of *fronds*. In these fronds the veins are arranged in a dichotomous manner—that is, they run in a fan-like form from the base to the margin, and each is divided and subdivided into two smaller ones. Ferns display this mode of venation very clearly, and it adds greatly to the beauty of some of the species. Being the simplest of all kinds of venation, it is therefore

peculiar to the simplest of all plants, in which the leaf is reduced to its true typical character as the basis of all vegetation—performing its own proper functions as a leaf, and also serving the part of bracts, calyx, blossom, and seed-vessel. Dichotomous veins are closely connected with the fructification, for the brown dust-like clusters of fern-seed are almost always found at the termination of these veins. At the back of the jagged green fronds of the polypody, the orange spores are most beautifully arranged on the prominent black veins like two rows of golden buttons, and make this common fern one of the finest ornaments of our old walls and ruins. These, then, are the three distinct types of leaf-venation peculiar to the three great classes of the vegetable kingdom: the reticulated, or netted-veined leaves, representing the dicotyledons or exogens; the parallel-veined leaves, representing the monocotyledons or endogens; and the dichotomously-veined leaves, representing the cryptogamia or cellular order; and under one or other of these three great types of leaves nearly all the immense variety of plants in the world must be classed. There are indeed several very interesting exceptions. The arum or cuckoo-pint, the beautiful calla or Ethiopian lily, and the *Lilium giganteum* of Northern India, are monocotyledons, and yet their leaves have reticulated or netted veins; while, on the other hand, in *Nerium*, and two or three other species belonging to the dicotyledons, the leaves exhibit the parallel venation peculiar to the monocotyledons. And there are a few species of flowering plants that have the dichotomous veins characteristic of the cryptogamic or flowerless order.

But these strange transitional forms, exceptions as they are to the general rule, are exceedingly instructive, inasmuch as they conclusively prove the proposition of this paper, that a well-defined unity of form and structure runs throughout the whole vegetable kingdom, and that the leaf is the typical organ that unites all its species and parts.

Some leaves consist of little more than veins, as in the pine-tribe, in fennel and southernwood, and in the barberry when its leaves become hardened and change into spines. A very remarkable endogenous plant has recently been discovered in the streams of Madagascar, called the *Ouvirandra fenestralis*, whose leaves are entirely without the green cellular substance, called parenchyma, which fills up all the interspaces in other leaves, and consist solely of an open network of veins, like a piece of lace. The distinction of the veins determines the general outline of the leaf. When the mid-rib gives off all the chief veins, the leaf is long and simple; when there is no mid-rib, but several chief veins arise from the point of junction with the stalk, then the leaf is broad, and more or less divided into segments according to the number of chief veins; and in cases where the stalk is prolonged beyond its normal length, it becomes an outside mid-rib, and the leaf is compound,—that is, it consists of any number of little distinct leaves arranged on either side of it, either alternately or in pairs. And it is a noticeable circumstance that in compound leaves—whenever the number of the leaflets is odd—one little leaf is situated at the extreme end of the leaf-stalk, to complete the symmetrical outline; whereas if the number of leaflets

be even, the stalk either terminates abruptly after having given rise to the last pair of leaflets, or is continued beyond them, as in creeping plants, in the form of a long wiry tendril. The gradual change from an entire leaf to the extremely divided leaf, say of the *Umbelliferæ*, may be traced by means of intermediate transitional forms. The entire leaf becomes first toothed, then lobed; and the lobed leaf passes by various stages into the compound, decompound, and supra-decompound. Compound leaves thus differ from simple leaves only in degree of development. The veins of leaves are variously modified to suit the requirements of plants. They become tendrils, as we have seen, in order to support delicate trailing plants; they become spines, to defend plants that are peculiarly exposed to injury; and in the holly it is remarkable that the leaves which grow nearest the ground are thickly furnished with spines, while those above reach gradually become smoother and smoother, until at last, at the top of the tree, they are free from spines. There is no end to the diversity of shape which leaves display; almost every species of plant having a different kind of leaf. But it almost never occurs to us to ask ourselves the object of this variation of shape. We regard it as a thing of course, or refer it to that boundless variety which characterises all the works of nature, in accommodation, we proudly but foolishly suppose, to man's hatred of uniformity. But observation and reflection will convince us that there is a special reason for it; that the shapes of leaves are not capricious or accidental, but formed according to an invariable law, the council of His will with "whom

there is no variableness or shadow of turning." In the first place there is a morphological reason for it. The shape of leaves, as I have said, depends upon the distribution of the veins, and the distribution of the veins upon the mode of branching in the plant, and the mode of branching in the plant to its typical character as an exogens or endogens, and its typical character brings us back again to the leaf. When the leaf is simple, the branching of the stem and the blossoms is simple; and when the leaf is compound, all the parts of the plant are also compound. Thus, the single flower of the bluebell is connected with a simple undivided leaf; whereas the foamy umbels of the parsley or the caraway, consisting of an immense number of florets, are accompanied with compound foliage, very much divided. The common geranium has five stems, five flower-stalks, five sepals, five petals, and the stamens in multiples of five; and this symmetrical arrangement is associated with the five parts into which each of its five leaves is divided. Thus, then, the shape of the leaf is a part of that wonderful series of relations which makes every plant a unity—a repetition of similar organs. But besides this morphological reason for the immense variety of leaf-shapes, there are also teleological and geographical reasons. Leaves are adapted not only to the typical character of the whole plant, but also to the character of the situation in which it grows. They are, moreover, exactly constructed to shade and shelter, or freely expose to the light and air, the plants on which they are found, and to transmit the dews and rains which fall upon them to the young absorbing

roots. He who studies attentively and reverently the numerous wonderful modifications in shape and structure which the typical leaf undergoes, to suit the varied circumstances of plants, will be brought by this study, more closely than by anything out of the Bible, into the personal presence of Him who said, "My Father worketh hitherto, and I work." When we consider that the leaves of plants growing in high exposed situations are narrow and rough, and those of plants growing in low sheltered places broad and delicate; that in most European plants the cuticle contains but a single row of thin-sided cells, whilst in the generality of tropical species, growing under great differences of temperature during the day and night, there exist two, three, or even four layers of thick-sided cells, which give the leaf an almost leathery appearance; when we see stings on the nettle and scurfy scales on the Alpine rhododendron leaf, glands containing essential oils and resinous matters in myrtles and mints, which without these could not resist the cold, and lymphatic hairs on the leaves of plants growing on dry soil, or on the high mountains of hot climates,—when we understand the significance of all these things, we are placed face to face with a Divine contrivance of means to ends, which may well fill us with reverence and godly fear.

I have often had a train of reflections of the most profitable kind awakened in my mind by simply looking at the common water ranunculus, whose white flowers cover the surface of many of our quiet rivulets in June, and observing that the leaves floating on the top of the water were round and broad, whereas the

lower ones, immersed in the stream, were divided into a vast number of linear segments, so as not to impede the current or be torn by its force. Even in gazing on the common gorse or whin of our hill-sides—a plant, apart from the golden glory with which the summer halos it, not very attractive to the lover of beauty—I have been often struck with the same adaptation to the tempestuous currents of the air, in its sharp needle-like leaves and stems—a proof of God's care over the homeliest thing, giving more honour to that which lacked it. But feelings of greater interest still will be excited by the more wonderful adaptations which we see in the tropical plants growing in our conservatories. The mimosa, peculiarly exposed to injury, sensitively drooping its leaves at the slightest touch; the pitcher-plant, holding up its leaf-goblets filled with water to refresh it in the thirsty desert; the leaf of the Venus' fly-trap of North America, closing together on its prey by turning on its mid-rib as on a hinge; the leaf of the cactus growing on the dry plateaus of Mexico, fleshy and juicy, and having no evaporating pores in its skin, so that the moisture imbibed by the root is retained; the gigantic leaf of the royal water-lily of South America, furnished on the under-side with outstanding veins of great depth, acting as so many supporting ribs: these and a thousand other instances almost equally remarkable, that might be alluded to, attract the most careless eye, and, in their strange variations from the typical form, disclose abundant proof of beneficent design.

The colours as well as the shapes of leaves are wonderfully diversified, though green is the prevailing

hue, and every varied shade of that colour, from the darkest to the lightest tint, is exhibited—and very beautifully, for instance, in the verdure of spring ; yet the whole chromatic scale may be seen illustrated in the foliage of plants. Indeed, were it possible to see specimens of the whole vegetable kingdom growing together, an autumnal forest would not exhibit greater varieties of coloured foliage. In some plants the leaves are as beautiful as the flowers of other plants ; and these are now cultivated and grouped with great effect in our conservatories. A greenhouse full of beautifully-foliaged plants, is as attractive as one stocked with gay blossoms. It is a remarkable circumstance, that when the leaves are dressed in bright crimson, or golden, or silvery splendours, the flowers are almost invariably sombre in hue, and insignificant in form and size. What purposes such beautiful leaves may serve in the economy of vegetation, we cannot in every case find out satisfactorily. It may be to absorb or reflect the light and heat of the sun in a peculiar way, or to guard the vital organs from injury by diverting attention from them. In orchids and other plants, the blossoms are gorgeously coloured and peculiarly shaped, in order to attract insects, without whose agency the species could not be fertilized or propagated. But in plants where the foliage is large and beautiful, and the flower minute and sombre, it seems as if Nature wished to conceal her vital processes, lest they should be frustrated or injured by animals. Probably, also, the same law of compensation may be illustrated in the case of coloured leaves, as in the irregular corolla of flowers, where the odd

petal has a different and much brighter colour, as in the common pansy. Do not these curious plants, that among their leaves of light have no need of flowers, resemble those rare human plants, that develop all the beauties of mind and character at an exceptionally early age, and rapidly ripen for the tomb? They do not live to bring forth the flowers and the fruit of life's vigorous prime; and therefore God converts their foliage into flowers, crowns the initial stage with the glories of the final, and makes their very leaves beautiful. By the transfiguration of His grace, by the light that never was on sea or land, He adorns even their tender years with all the loveliness which in other cases comes only with full maturity.

In this paper I have said nothing regarding the physiological structure of the leaf, or the functions which it performs. A whole chapter might be written upon these interesting topics alone. I have confined my attention exclusively to the typical character of the leaf and its meaning, and I have endeavoured to show how a common plan regulates all the organs of the plant, and that these organs are modifications of the leaf—for special functional purposes in the economy of the plant itself—and for wider beneficent purposes in the economy of man and of the lower animals. This is a department—almost unknown to Paley—which has been very successfully explored of late years; and it has supplied many very interesting and instructive additions to the evidences of natural theology. I would recommend all who read this sketch, whose thoughts have not previously been

directed to the subject, to examine for themselves the typology of the leaf. Abundant illustrations may be found everywhere. Viewed in this light, every leaf will become an eloquent teacher of the deep things of God, and, like the famous Sibylline leaves of old, utter oracles of far-reaching significance. Even in the sad season of decay, the falling leaf, while declaring its own solemn parable and lesson of human mortality, will only afford additional facilities for the prosecution of the study. And the naked boughs aloft, and the rustling golden leaves beneath, will reveal more clearly and conveniently their unity of type and pattern, and help us in their own manner to understand how *all* things, the changeable and the most enduring, hang together in one unbroken chain, held in the hands of the Infinite and the Unchangeable, of which we see a few links, but the beginning and the end we see not, and never shall see.

CHAPTER VIII.

THE TEACHING OF THE EARTH.

"*Speak to the earth, and it shall teach thee.*"—JOB xii. 8.

MAN is not an independent unit; a self-centred, self-sustaining *I*. If placed in blank space, he would cease to exist. He requires a framework of external circumstances, as well as a framework of flesh and blood. His body must be enveloped by the earth, as his soul is enveloped by the body. The boundless and varied landscape, the illimitable blue sky, the starry heavens, must all become parts of his being. He must have relations with all the elements of nature as close and intimate as those that exist between the various parts of his own structure. Even the spiritual portion of his being is closely connected with and dependent upon the material universe. The scenes of earth are present with him in the most concentrated mental effort, and in the highest state of spiritual abstraction, as well as in the mere sensations by which the animal nature is sustained. There is a constant process of analogy going on between the outer and inner world, by which the mind acquires knowledge, and expands its faculties and capacities. Creation is reflected and idealized in the mirror of the soul.

Sensation is the external world felt within; thought is nature made conscious in the mind; language is the symbolic representation of physical appearances. In short, all the circumstances of earth may be regarded as the oil which feeds the flame of thought, burning continually in the secret shrine of man's mind; and countless affinities, mental and corporeal, earthly and spiritual, verify the saying of the Greek poet: "O earth! earth! how art thou interwoven with that nature that first came from thee!"

"Dust thou art, and unto dust shalt thou return," is the origin and destiny of man's material part. The first man was created directly from the dust of the earth; and the corporeal frame of every human being, though derived by birth from a long succession of ancestors, is composed of the same mineral substances which form the crust of the earth. The common constituents of the soil meet and mingle in the human body, and are there amenable to the same physical laws which operate in the wide field of nature. It is a strange process by which the materials of the earth enter into and build up this palace of thought. The mountain rock, exposed to the disintegrating effects of the weather, loses that peculiar chemical or cohesive life which keeps it from changing or decaying, and crumbles into dust, in which state it is borne down by the storm or the stream to the plain. The soil thus formed is taken up by the roots of plants, and eliminated into the various parts of their structure. These plants die, and form by their decomposing remains a rich and fertile mould. Down into this stratum of decay and death the grass strikes its roots, and forms

the support of those animals which man rears exclusively for food. The particles thus organized become endowed with the highest vitality, and are associated with the immortal spirit in the closest and most intimate relationship; so that what is now bone of our bone and flesh of our flesh, may have once formed part of a granite rock protruding far up among the clouds, on some distant mountain peak. But the body that was thus derived from the earth, returns to the earth again. The material particles, as well as the forces, which, ascending by the various stages of vegetable and animal life culminate in the human frame, and receive their highest expression in its form and action, are again brought back to the bosom of the earth, to mingle with the mass of its materials, and again to ascend the ladder of life in other forms. Nature claims her gifts with the most rigorous and unsparing exactitude. We receive our bodies from the earth only in loan, and for a fixed and definite period. Throughout the whole course of our life we are paying our debt by imperceptible instalments. We are constantly returning to the earth the materials we received from it. Every movement of our bodies, every exercise of thought and will, every muscular and nervous effort, is accompanied by a corresponding change in the structure of our frames,—exhausts the vitality of so much brain, and nerve, and muscle. Every part of our body is undergoing a process of constant disintegration and renovation; constantly throwing off old effete matter, and constantly receiving deposits of new and living matter. Day and night, sleeping and waking, this ceaseless dying and ceaseless

resurrection is going on with more or less rapidity; the river of life flows on changing its particles, but preserving the same form and appearance. In seven years the whole structure is altered; down to the minutest particles it becomes essentially a different body, though the individual still retains his original form and his personal identity unimpaired. And when the sands in the glass have run on for threescore years and ten, the wonderful balance between life and death is destroyed; the soul that energized the materials of the body and controlled their ceaseless changes departs; there is no more compensating or restorative force, and decomposition goes on unchecked, until dust once more returns to dust, and ashes to ashes. Astonishing process! this circulation of matter and material forces throughout all nature! How it binds indissolubly all the parts of creation to each other by mutual sympathy and dependence! The simplest and minutest objects are related by this tie to the grandest and most sublime; the mountain depends upon the moss, and the moss upon the mountain. All nature is one great system of mutual accommodation. All things are perpetually occupied in ministering to the necessities of man; and he returns the obligation by ministering to their wants. He can most truly say to the worm, "Thou art my mother and my sister." He obtains dominion over the earth, to be again subdued by it; and the gardens that now yield to him their beauty, and the fields which now pour out their fruitfulness into his lap, shall ere long exact from him all that they bestowed,—be adorned by his beauty and nourished by his fruitfulness. The light of the stars

is on his brow, but the dust of the earth cleaves to his feet. The breath of God animates his frame; but the ashes of the earth circulate through it. Bound so closely then to the earth at every point of our corporeal and mental being, by a complex and wonderful system of relations, at once our cradle and our grave, at once the framer of our bodies and the teacher of our minds, the inspired writer may well enjoin us to "speak to the earth, and it shall teach us."

To the attentive ear all the earth is eloquent; to the reflecting mind all nature is symbolical. Each object has a voice which reaches the inner ear, and speaks lessons of wise and solemn import. The stream murmurs unceasingly its secrets; the Sibylline breeze in mountain glens and in lonely forests sighs forth its oracles. The face of nature is everywhere written over with divine characters which he who runs may read. But beside the more obvious lessons which lie as it were on the surface of the earth, and which suggest themselves to us often when least disposed for inquiry or reflection, there are more recondite lessons which she teaches to those who make her structure and arrangements their special study, and who penetrate to her secret arcana. She has loud tones for the careless and superficial, and low suggestive whispers to those who hear with an instructed and attentive mind. She has beautiful illustrations to fascinate the childish; and solemn earnest truths in severe forms to teach the wise. And those who read her great volume, admiring with the poet and lover of nature the richly-coloured and elaborate frontispieces and illustrations, but not arrested by these—passing on, leaf after leaf,

to the quiet and sober chapters of the interior—will find in these internal details revelations of the deepest interest. As we step over the threshold, and penetrate into the inner chambers of Nature's temple, we may leave behind us the beauty of the gardens and ornamented parterres; but we shall find new objects to compensate us: cartoons more wonderful than those of Raphael adorning the walls; friezes grander than those of the Parthenon; sculptures more awe-inspiring than those which have been disinterred from the temples of Karnak and Assyria. In descending into the crust of the earth, we lose sight of the rich robe of vegetation which adorns the surface, the beauties of tree and flower, forest, hill, and river, and the ever-changing splendours of the sky; but we shall observe enough to make up for it all in the extraordinary relics of ancient worlds, strewn around us and beneath our feet.

If the earth was a wise and eloquent teacher in the days of Job, and worthy even then of the most careful attention, how much wiser is she now, when the experience and attainments of nearly four thousand years have been added to her stores of knowledge; and when, in addition to all the information that has been accumulated in regard to her external appearance and physical laws, she has thrown open to our inspection an entirely new department of knowledge, revealed to us her inmost recesses, lifted up the dark curtain that concealed the history of primæval times, and permitted us to study in her rocks and fossils the revolutions of millions of years. So enlarged and illuminated, a most wonderful book is the book of the earth! Its

pen is the finger of God. Its leaves are the various stratified rocks placed one above another which compose its crust, and which represent the element of time by their thickness, and remarkable events by their dislocations. Its letters are the fossil remains of plants and animals entombed in these rocks; the enduring traces left behind by the eruption of the volcano, and the tranquil lapse of the waves on the beach; shadowy memorials of life; faint, but indelible foot-prints of creatures which crawled over the soft mud, whose very bones have perished; ripple-marks of primæval seas whose murmurs passed into silence countless ages ago; circular and oval hollows produced by showers of rain which no eye witnessed, and which fell on no waving corn-field or flowery meadow; impressions caused by viewless and intangible winds, indicating the strength of their currents, and the directions in which they moved; smooth and polished, or grooved and striated marks graven upon rocks by glaciers which the sunshine of forgotten ages had melted away. All these hieroglyphics, with which the stony leaves of the earth's great book are crowded, thick as the inscriptions on the buried bricks of Nineveh and the mummy caves of Egypt, have been deciphered with remarkable accuracy by the geologist. They are to him as significant as the trail of his enemy is to the American savage, or the camel's track in the sand to the roving Arab. As the ancient civilization of the great empires of Egypt, Nineveh, and Babylon, has been recovered to us, and pictured in nearly all its original grandeur and completeness from the relics left behind in the mounds of Khorsabad and the

temples of Memphis and Thebes, so from these remains of the pre-Adamite world we can reconstruct, in imagination, the successive scenery of its different epochs. Before the eye of fancy, at the spell of some fossil, or insignificant impression in a wayside stone, a combination of landscape scenery with which there is nothing analogous in the present condition of things, passes in review; and standing on this high vantage-ground of time, we can survey, by the help of those landmarks placed here and there for our guidance, the whole history of our earth, the whole series of creations which one after another appeared and vanished.

There are two moments, according to an eminent American *savant*, which stand out conspicuous above all other moments in the intellectual history of our race. The first of these moments was when Galileo, with awe and ecstasy, gazed through the first constructed telescope, and the phases of Venus and the moons of Jupiter suddenly revealed to him the existence of other worlds besides his own. Before that sublime moment the earth was supposed to be alone in the universe; sun, moon, and stars being but satellites—fires to warm its hearth, lamps to light its darkness. In an instant man's intellectual vision was immeasurably extended, and the idea of *infinite space peopled with myriads of worlds like our own* was first realized by the human mind. We have all been accustomed to look upon this as the grandest moment in man's intellectual history. But there is another moment, equally grand, though not equally well known. A large quantity of fossil bones and shells

was placed before the aged Buffon for inspection. To his intense astonishment, he found them entirely different from the remains of animals now inhabiting the earth. In that moment, in the mind of the veteran naturalist, suddenly sprang up, as if by inspiration, the idea of *infinite time peopled with other creations besides our own.* In an instant man's intellectual vision was again immeasurably extended. Before that sublime moment, the present creation was the only one known or suspected, but by this discovery it dwindled into a single day in the geological history of our earth. Like Moses on the top of Pisgah, Buffon beheld the whole future of geology in the vision of that moment. "Filled with awe," we are told, "the old man, then over eighty years of age, published his discovery. In a kind of sacred frenzy, he spoke of the magnificence of the prospect, and prophesied of the future glories of the new science, which he was, alas! too old to pursue."

It must ever be regarded as a singularly fortunate circumstance, that geology should be the youngest of the sciences—that systematic researches into this department of knowledge should have been postponed until the inductive philosophy was sufficiently established to check their mischievous tendency. This, I am persuaded, was not a mere accident, but a divine pre-arrangement. From the earliest times, organic remains, particularly marine shells, were found far inland, and even high up the sides of mountains, and many rocks were observed to be composed almost entirely of fossils; but, strange to say, they excited no special interest or general curiosity, and only by a

few thoughtful men were they spoken of as conclusive evidences of the universality of the Deluge. Geology, it has been well said, as a heathenish or monkish pursuit, would have been a chaos of distorted facts; and the efforts of ages would have been necessary to clear away the rubbish of classic conceits and mediæval legends, which would have gathered like foul weeds around it. But fortunately it had no such ordeal to undergo. There were no previous structures to demolish. The ground was new and unbroken. The fathers of the science commenced their labours unobstructed by the ruinous foundations of previous misdirected operations, or claims to previous possession. The moment their eyes were opened to see things truly, the past history of the earth was opened up to them, and they were permitted to look back, with nothing to obstruct or cloud the view, to the point where the horizon of time was lost in the mists of eternity. They had none of the difficulties to contend with which so long connected the other sciences with occult mysteries — astronomy with astrology, chemistry with alchemy—no false theories to refute before they could advance the true ones. They entered upon their investigations at a singularly propitious period in the history of human intellectual progress. All the other departments of science, upon whose testimony geology depends, had arrived at that state of exactness and efficiency in which they could render her the most important service. A purer religion also at the very moment of her birth conferred upon her the most distinguished aid. Delivered from the corruptions of Popery; freed by the Reformation from

the fetters which for many ages had proved fatal to the progress of all truth—Christianity in its turn freed the mind from those superstitions in which it was so prone to indulge, stimulated it to active philosophical research; and prevented it from resting in vague conjecture, and attributing to imaginary or supernatural causes phenomena that were beyond its ordinary range of observation. Being connected from the very first with geological investigations, the testimony of the rocks and the testimony of the Bible being brought into apparent antagonism, a desire to harmonize their conflicting evidences gave a deeper and wider interest to the whole study, and created that eagerness to become acquainted with its leading facts and theories which at the present day is so general.

"On earth there is nothing great but man," was the proud aphorism of the Middle Ages. Nature was ignored; landscape painting was an art unknown; poetry derived all its images from the seething world of humanity; no scenery was admired save cultivated fields and pastoral plains; science was confined entirely to the study of metaphysics; the human mind revolved round itself, and could see nothing but the reflected light of its own glory. In these modern times, on the other hand, nature occupies the highest position; physical science is more studied than mental science; landscapes form favourite subjects in our galleries of art; the pages of our poets radiate with exuberant imagery derived from nature, like the rainbow hues that flicker on the neck of a dove; and a love of wild and magnificent mountain scenery—of spots where nature is all in all and man is nothing—fostered

by the facilities of travel, seems the fashion of the day. This nature-worship of the nineteenth century, however, must be regarded as a transitional and not as a permanent phase of modern civilization. Nature should ever serve as the handmaid of humanity; and the world, alike in its grandest and loveliest aspects, ought to be looked upon merely as the setting for the human picture; and I believe that when, by the study of external nature, a true and solid foundation is laid for philosophy, the human mind will again revert to the study and contemplation of itself as the greatest of nature's works. In the meantime, however, the excessive nature-worship of these days must be regarded as a reaction from the unreasonable man-worship of mediæval times. It affords a striking example of those great correctives which exist in the moral as well as in the physical world for the removal of errors and abuses, and the readjustment of the balances of truth and rectitude. It was necessary that man should be displaced from the lofty pedestal upon which he had fixed himself for the admiration of the universe. It was necessary that his arrogant claims and proud pretensions should receive a check, and that he should be brought to know his true position in creation. And nothing has operated more beneficially in this respect than the proper understanding of the great truths which the earth reveals—the realization of the humiliating fact, that the whole history of the human race is but a single day in the immeasurable cycle of geological changes. Man finds himself, while reading the lessons of geology, shrunk in time, as by the revelations of astronomy he

found himself shrunk in space. Not only is this earth, his habitation, dislodged from its assumed centrality of position, and thrust into a corner of creation, a mere atom in the midst of infinite space, a comparatively insignificant member in an innumerable family of worlds; but even of this obscure atom itself he is dismayed to find that the whole human race has but a late and precarious tenure, "a short and terminable lease of an antiquated tenement." For incalculable ages, previous to man's advent, the earth was tenanted by other forms of life. Thousands of active creatures —whole species and genera—lived and died before he was formed out of the dust of the earth. Nature exhibited her changing forms, her dissolving views of cloud-scenery, and her revolving panoramas of landscape, without a single human being to admire or enjoy them. Not an echo was sweetened by a single note of instructed music. Not an eye glistened with wonder at the strange weird aspects of the carboniferous vegetation. Not an ear was there to catch the solemn roll of the tide, the roar of the volcano, or the gentle sigh of the wind through the forest. So far as man was concerned, it was a world of silence and desolation. The human race is indeed of very recent origin, compared even with the latest of those geological changes with which some scientific men of the present day would fain connect its infancy. In the language of Scripture, "we are but of yesterday, and know nothing."

This lesson which the earth teaches, it may be said, is a very sombre and depressing one. True in one sense; but it is also very salutary. Besides, there is

consolation mingled with it. The teaching of the earth does not leave man humbled and prostrated. While it casts down his haughty and unwarrantable pretensions, it also enkindles aspirations of the noblest kind. While it shows to him the shortness of his pedigree, it also reveals to him the greatness of his destiny. It declares most distinctly, that the present creation exceeds all the prior creations of which the different strata of the earth bear testimony, and that the human race occupies the foremost place among terrestrial creatures. It teaches unmistakeably that there has been a gradual course of preparation for the present epoch—that "all the time-worlds of the past are satellites of the human period." There are a thousand evidences of this in the nature and arrangement of the earth's materials, so clear and obvious that it is impossible to misunderstand them. The nature of the soil on the surface; the value, abundance, and accessibility of the metals and minerals beneath; the arrangement of the various strata of rock into mountain and valley, river and ocean-bed: all these circumstances, which have had a powerful influence in determining the settlement, the history, and the character of the human race, were not fortuitous—left to the wild passionate caprices of nature—but have been subjected to law and compelled to subserve the interests of humanity. The carboniferous strata themselves, their geographical range, and the mode in which they have been made accessible and workable by volcanic eruptions, clearly evince a controlling power—a designing purpose wisely and benevolently preparing for man's comfortable and

useful occupancy of the earth. The destiny of particular nations was predetermined in the earliest geological history of the earth; for almost all the true coal of the world is found in the north temperate zone, precisely in those regions where it is most needed, and where it can be turned to the best advantage as the aliment of industry and civilization. Moreover, as all the previous arrangements of the earth's crust have paved the way for the present arrangement, so have all the previous forms of organization, adapted to these varying conditions, pointed forward to the human race. That there has been a regular order and sequence, not in the nature of things, *but in the plan of the Creator*, and upon the whole a progressive one, in the animal creation, is admitted by nearly all geologists. Viewing the remarkable facts which have been elicited during the last fifty years, progressively and in the order indicated by nature itself, from the lowest fossiliferous deposits upwards, we shall find everywhere a succession of creatures rising from lower to higher organizations, not by the law of development, but by the law of substitution. All these point to man as the apex of creation, and the top of the earthly hierarchy. "All his parts and organs," says Professor Owen, "have been sketched out in anticipation in the inferior animals"—in the successive races of creatures that lived and died during the earlier epochs of the earth's history. Step by step the ideal exemplar, the divine archetype, first embodied in the fishes of the earliest seas, was modified into higher and yet higher forms of life, until at last it was arrayed in that costly vesture of humanity that has

been found worthy to clothe the incarnate Redeemer. Thus man becomes "the centre of the universe of time." Thus his dignity is restored, or rather dignity is given in place of pride; his history and position become unique; he can claim a noble, if not an endless genealogy, and assert what no other race can assert, that he is the "son of Adam, which was the son of God."

The "depths of the earth," as well as the surface of the earth, teach us the solemn lesson of change, and also the unchangeableness of Him who has these depths in His hands. Each successive stratum, as we penetrate downwards, reveals in language that cannot be mistaken, a tale of wonderful changes. Each convulsion and revolution, whether in wildest storm or in calmest peace, has engraved its record as with a pen of iron upon the rocks for ever. Here we find that the ocean has been at work, exercising untiringly its *degrading* influence, reducing the land to a lower level, wearing down mountains, and depositing in one place the sediment taken from another. There we find in the upheavings of the earthquake, or the lava-floods of the volcano, that fire has been the agent of change, exerting its *elevating* influence—raising land from the ocean-bed, and piling Ossa upon Pelion to scale its native heavens. Never since the creation have these grand agencies slumbered; but have continued to display their resistless potency throughout all ages of the earth's history. The solemn voice of the ocean has never been silent since time began; the earth is the altar of Vesta on which the sacred fire, once kindled, has never been extinguished. Antagonistic in their nature and results, these two forces, fire

and water, have ever battled for the possession of the earth; while a Power mightier than either has ever sustained the balance between them, making the one the repairer of the desolations of the other. Never has the fire, rising victorious over the water, been allowed to work its wild will, elevating the whole earth into a billowy chaos of mountains, and imprisoning the sea in deep and narrow abysses. Never has the water, released from the powerful grasp of the fire, been allowed to go forth impelling its currents and rolling its waves without hindrance, until every island and continent had disappeared, and one shoreless ocean girdled the globe. The earth tells, in its mute language of signs, that the Almighty has throughout all time set distinct and impassable bounds to both; that he has weighed the mountains in scales and the hills in a balance, and measured the ocean in the hollow of His hand; and thus, by the nice adjustment of these mighty antagonistic forces, secured the permanence and peace of the earth. It was on tables of stone that God's finger traced the unchanging moral law; the same handwriting may be recognised in the masses of rock from which these very tables were constructed. We can trace the universality of divine law throughout all the successive creations of the earth—throughout all the time-worlds, as throughout all the space-worlds, in geology as in astronomy; unity of force amidst diversity of phenomena—unity of plan amidst diversity of expression. And thus, amid all the varying operations of His hands and dispensations of His providence, we find Him to be without "variableness or shadow of turning."

Some object that the teaching of the earth is delusive and uncertain. This opinion is fostered by the varied, and, in many cases, conflicting readings and interpretations of the geological record. Theories have been formed which more advanced knowledge has demonstrated to be false and untenable; and these hasty conclusions have tended in some measure to throw discredit upon the whole study, by giving it a vague appearance. It was to have been expected beforehand that a science, offering such great temptations to speculation, so fresh and young and buoyant, with such boundless fields for roaming before her, would have been excited to some extent by the vagaries of fancy, and that individuals on the slenderest data would build up the most elaborate structures. But geology, upon the whole, has been less encumbered with these than perhaps any other science; and the researches of its students have been conducted in a singularly calm and philosophical spirit. Every step has been deliberately taken; every acquisition made to its domains has been carefully surveyed; and hence, we are at this moment in possession of a mass of observations which, considering the very recent origin of the science, is truly astonishing, and which is entitled to the utmost confidence. Furthermore, the teaching of the earth is not irreligious—is not calculated to undermine our faith in the inspiration of the Bible, and to nurture infidel propensities. This objection has been frequently brought against it, and urged with vehemence and rancour; and a feeling of repulsion, a strong and unreasonable prejudice, has in consequence been raised against it in the minds of

many pious and estimable individuals. They look upon the science with dread, and place the study of it in the same category with that of the blasphemous dogmas of the Rational school. It is true that it has proved the old interpretation of the first chapter of Genesis to be erroneous; but its conclusions have been found to be in perfect harmony with a correct interpretation of the original text. The meaning which geology attaches to the Hebrew words in which the creation of the world is described, is fully substantiated by philological analysis and Scriptural usage. It is true that there are geologists of considerable eminence who have prosecuted their inquiries into the history of the earth with the avowed purpose of throwing discredit upon the truths of Revelation, who have sought in the disclosures made by the various leaves of the stony book for proofs by which their scepticism might be, not removed, but confirmed. Such geological perverts there always will be; but their antagonism to Revelation is not derived from or fostered by their geological studies; it originates from a deeper, though less apparent source—even from the natural depravity of the heart, which is utterly averse to the humbling doctrines of the Bible, and is the fertile fountain of every species of infidelity, geological and metaphysical. The seeming facts hostile to the inspired Record promulgated with such proud boasting by them, have, one and all, been found to be mere hasty conclusions and unwarrantable inferences. I believe that a careful study of the leading works and accumulated facts of geology by any candid, unbiassed mind, will result in the conviction that nothing con-

nected with the progress of science has ever yet truly infringed the integrity of Revelation. On those points where a discrepancy exists between the two records, we may safely assert, from past experience, that there is either a misunderstanding of the import of the Bible, or a want of sufficient evidence to establish the geological conclusion. If, on the one hand, theologians have been obliged continually to retreat before the onward march of science, it is because they at first took up ground which they could not maintain; and if, on the other hand, geologists have been compelled to modify or alter their views, it is because they were formed on data altogether insufficient, and by an utter disregard of the principles of induction. But while I maintain that Science and Revelation have not been proved to be antagonistic, I feel at the same time that no adequate theory of reconciliation has yet been framed; the theories which have already been advanced being liable to numberless objections—some of them being absolutely gratuitous; the differences they were formed to reconcile being mere phantoms that had no real existence except in the minds of their authors. I believe that hitherto there has been too much grasping after mere reconciliation on the part of all concerned; too much effort, especially by geologists, to bring the declarations of Genesis into harmony not only with their facts, but also with their inferences. Every candid and capable mind must feel that the time has not yet come when a perfectly satisfactory theory of reconciliation can be advanced; although by the accumulation of facts, and a clearer perception of their bearings and relations, we are every

day drawing nearer to such a consummation. There are still several data essential to the argument on both sides wanting; several letters of the alphabet missing, without which the geological record is unintelligible. For instance, our ignorance of the condition of the earth immediately before the creation of man, is like the loss of a most important link in the chain of induction. That part of the geological record is written in strange characters, and the whole is hardly legible; though recent writers have tried to decipher it by the sparks of light struck from the flints of Abbéville, the phosphoric gleam which hovers over the skulls of Engis and Neanderthal, and the bone contents of the English and German caves. Hence any hypothesis based upon this part of the geological testimony cannot be depended upon, and is liable to be very considerably modified by subsequent observations and discoveries. Hitherto the attitude of Biblical geologists has been conservative and apologetic. They have been employed rather in removing difficulties and destroying false theories, than in forming or advancing a positive coherent theory of their own. This position may have been necessary at one time, but it is now no longer so, and should be abandoned. All unreasonable jealousy of science must be disregarded, and truth must be sought after with honesty and patience, irrespective of its ulterior consequences. The Bible itself stimulates to such a course—places no obstacles in the way of the most free and extensive investigations—the most searching and comprehensive inductions—provided only that they be honest and impartial. Nay, it inculcates "speaking to the

earth" in this way as a duty, and brands with its disapprobation those who neglect it. And I am persuaded that the more geology is studied, the more will its dignity and religious tendency be acknowledged; the more will its claim to be considered the chief handmaid of religion among the sciences be vindicated. It will be found that though the truth of God is one, it has two special aspects, as seen in Nature and in Revelation; and that these two aspects, like the two views of a stereoscopic picture, blend together in the stereoscope of faith into one beautiful and harmonious whole, standing out in clear and glorious perspective. The teaching of the earth will confirm and illustrate the teaching of the Bible; and both will fill the heart of the humble, reverent student with adoring views of God's power, wisdom, and love.

CHAPTER IX.

THE VINE AND ITS BRANCHES.

"*I am the vine, ye are the branches.*"—JOHN xv. 5.

THE vine is one of the most extensively diffused of plants, and in this respect it furnishes a beautiful emblem of the universal spread of the Christian Church. Its early history is involved in obscurity. It is as old as the human race. Its cultivation was probably amongst the earliest efforts of human industry. It is first introduced to our notice as the cause of Noah's shameful drunkenness, and as one of the articles of provision hospitably offered by Melchizedek to Abraham. It is believed to be originally a native of the hilly region on the southern shores of the Caspian Sea, and of the Persian province of Ghilan. The Jews have a tradition that it was first planted by God's own hand on the fertile slopes of Hebron. Certainly, the climate of the hill-country of Judæa suits it so admirably, that we may well believe it to be indigenous there. It was from the Judæan valley of Eshcol that the spies carried away the gigantic cluster of grapes. Every traveller who has visited this region testifies to the luxuriance of its vines, and the large size and luscious taste of the

grapes. Vineyards abound there more than in any other part of Palestine; and the earliest and latest heraldic symbol of Judah, both in the prophetical and evangelical records, is a "fenced vineyard on a hill of olives." From this, its native region, the vine has been gradually introduced into other countries. Its progressive cultivation, and removal by wandering tribes and conquerors from one part of the earth to another, associate it in a very remarkable degree with the history of the human race. The great revolutions of society, it has been remarked, may be traced in its gradual distribution over the surface of the globe; for wherever man has penetrated, in that spirit of change and activity which precedes or accompanies civilization, he has assisted in the dissemination of this useful plant, much more surely and rapidly than the ordinary agencies of nature. And now the range of the vine extends from the shores of the new world to the utmost boundaries of the old; its profitable cultivation in the open air, however, being still confined to a zone about two thousand miles in breadth, and reaching in length from Portugal to India. In all this it affords an appropriate image of the origin and diffusion of Christ's Church. The commencement of that Church dates as far back as we can trace the origin of our race. It was coeval with Adam and Eve, and sprang from that gracious promise given in Eden that the seed of the woman should bruise the serpent's head. It was first planted in the East. "God brought a vine out of Egypt, cast out the heathen, and prepared room before it, and caused it to take deep root, and it

filled the land. The hills were covered with its shadow, and its boughs were like the goodly cedars. It sent its boughs into the sea, and its branches into the river." For many centuries the Church flourished exclusively in the Holy Land, sheltering God's peculiar people withits foliage, and nourishing them with its fruit, while the rest of the world was left a moral desert. But when the fulness of time was come, the spell of this exclusiveness was broken, and it was transplanted and carried to other shores, no longer trammelled by forms, nor chained to place, but made free of all the countries of the earth. The wars and conquests of kings, the ambitious schemes of politicians, have all been overruled by Him who maketh the very wrath of man to praise Him, for the wider extension and the more efficient establishment of His own Church. The very colossal power of the Roman Empire itself was made subservient to the process by which it was to be broken up; and the efficacy of its laws manifested in favour of the religion to which it was inveterately and specially hostile. Little did the Emperor Titus imagine that, while laying waste the Jewish kingdom, he was raising up from its very ruins, a kingdom destined speedily to overshadow and overthrow his own empire, and lay his proud religion in the dust. The Roman sword, intent only on self-glorification and the pride of conquest, was wielded by the Almighty arm to clear the way for the triumphant march of Christianity over every nation and kingdom; and though that sword was frequently turned against the Church, and wrought sad havoc among its members, yet each pruning, each

shoot that it cut off, became a separate living vine, extending to other regions the blessings of the Gospel, —like that strange American plant which has been recently introduced into our rivers and canals, every joint and fragment of which, however minutely cut, becomes an independent individual, thus diffusing the plant by the very efforts made to extirpate it. And in this way the Church grew and spread, until now its range extends from sea to sea, and from the river even unto the ends of the earth, though the region of its most active life is still confined to the zone within which the vine is profitably cultivated in the open air. Christ and His disciples, like the vine and its branches, may be found everywhere.

A beautiful theory has recently been established in vegetable physiology, which illustrates in a most striking manner the nature of the union between Christ and believers, as symbolised by a vine and its branches. This theory proceeds on the assumption that all plants, without exception, are strictly *annual;* the only difference between the more fugitive and the more permanent species being that the one kind is propagated exclusively by seeds, while the other is propagated by both buds and seeds. This notion is opposed to the popular belief, and to the apparent evidence of our senses. A tree, under which class the vine of course is included, is generally supposed to be a single plant, like a primrose or a lily, only that it does not fade in autumn, and is possessed of perennial growth. The common idea is that it is an individual having the same kind of individuality or personality that a man has; the root, trunk, branches,

leaves, and blossoms, being component parts of one and the self-same single plant, just as the body, limbs, and various organs are component parts of one and the self-same human being. And this certainly is the impression which at first sight it produces. Recent scientific researches, however, have proved this belief to be erroneous. A tree is now found to be not a single individual, a single plant, but, on the contrary, an aggregate of individuals, a body corporate. The idea involved in a genealogical tree, is exactly that which is involved in a natural tree; the former consisting of living and dead persons, as the latter consists of living and dead plants. In its full wealth of summer foliage and vigour, a tree is literally a vegetable colony, propagating its individual plants *vertically* in the air, instead of spreading them out horizontally over the earth's surface, like herbaceous plants. "It is neither more nor less," to use the language of one who has written a special treatise upon the subject, "than a collection of living and growing, but separate and distinct, plants—the production of the current year, and likewise of the dead remains of a still larger number of individual plants of the same kind or species, the production of a series of bygone years." Each season new shoots or annual plants spring up from the buds which crown the old ones; and these are the only living parts of the tree. Each season, at the close of the year, these shoots or annual plants, having fulfilled the purposes of their existence, die completely—there being no provision in vegetable as in animal economy, to repair wasted tissues; but though dead and composed of very

perishable materials, they escape decomposition, to which all dead organic matter is liable when exposed to the action of the elements, owing to the roots of the new buds with which they are tipped growing over them, enclosing them on every side, and throughout their entire length. They are thus hermetically encased in the tree, and serve to increase its size, affording to the new plants that are to spring from them a temporary soil and a permanent mechanical support. A tree is thus like a cluster of coral—each new generation of living organisms developing parasitically upon the remains of a past generation, living and dead being built up into one compact corporate organization. And just as there is no limit to the growth and increase of coral structures, except the strength of the waves and the absence of secreting materials in the sea, so there can be no limit, on account of this peculiarity of its construction, to the size and age of a tree, except the limit imposed by soil and external circumstances. Now, viewed in this light, what a beautiful and appropriate type does the vine afford of the mystical body of Christ—that sacred and spiritual corporation composed of Christ, and of all who have been united to Him by a living faith as the living head—belonging to every age and country, belonging to every class and denomination, living and dead! This spiritual body is one organization; but, like a coral cluster, it is composed of numberless distinct and separate individuals. This sacred vine is a unity; but, like a natural tree, it is made up of countless separate plants. The union between Christ and His people, and between each of them-

selves, is of the closest and most vital description. Each member has his own personality, his own individual existence; and yet, living or dead, he is regarded as a scion, or branch, of one common stock—a component and integral part of one tree. The same bond unites each to all; the same sap pervades all; the same life animates them all. Christ is not the trunk, nor the branches, but the whole vine; they are members of His body, of His flesh, and of His bones. They are *His fulness*, in the same sense that all the separate plants growing on a tree, and the remains of those that are dead, make up the outline, and form, and substance of that tree.

This sacred vine will live for ever. It has gone on increasing in size from the days of Adam until now; and it will go on growing and enlarging until all the elect and redeemed are grafted upon it, and it shall cover the whole earth with its shadow. Individual believers are mortal and perishing, but the mystical body is immortal and everlasting. Generation after generation of Christians pass away as the annual shoots of the vine die, but the invisible Church endures, as the vine itself endures. New individuals, new races, succeed. Christ has a seed that serves Him in every generation, that rises up to take the place of the fathers and to keep this glorious vine green and flourishing. "As the days of a tree, so are the days of my people;" as the days of one of those giant cedars of California, whose infant shoots were put forth when Adam was in Eden, and is still green and flourishing as ever, and may yet last as long as the present system of things. The existence of God's

people in their individual capacity is threescore years and ten, but in their corporate capacity they live for ever. They shall endure when sun and moon shall have perished, and the heavens and the earth shall have passed away. Even though dead, the union of believers with Christ is not dissolved or disturbed. Just as the vine is a collection not only of living but also of dead plants, the dead surrounded by and enclosed within the tissues of the living, embalmed and preserved inviolate within the growing tree, so the mystical body of Christ is composed not only of living, but also of dead believers,—only one generation of living, but countless generations of dead. All the saints that are on earth, and all the saints that have departed this life, make but one great communion; they are all united to the same glorious Head, and share in the same gracious love. Every other tie has been dissolved. The most tender and endearing relationships of earth fall from the departing spirit, as withered festoons of flowers fall from the form which they wreathed when the scorching sun has set. The brother lets go, with a sad and lingering pressure, the hand of his brother, whom he has accompanied on the last journey down the dark valley; the mother resigns her child to a power stronger even than her love; the husband and the wife cling to each other to the last moment, but the parting kiss must be given, and the heart-broken farewell must be said; and there is no more marrying nor giving in marriage for ever. But the union with the Lord Jesus and His people, that union whose living links Christ's own hands have clasped and riveted, is beyond the power

of the destroyer. Though Christians die, they are still related—related to each other, and related to Christ in the bonds of the everlasting covenant. The separation between Christian friends is only temporary and partial. They are all members of the same living immortal body, parts of that whole person which is inseparably one with Christ. Their death is precious in His sight; their very dust is dear to Him. Nothing that forms an essential part of their living redeemed humanity is lost. Dead they are, but they have died in the Lord—they are asleep in Jesus. Their life is hid with Christ in God. They are bound up in the bundle of life—hermetically sealed from all the destructive elements of the world, from the cares, the sorrows, and the sins of time—in the living branches of the Tree of Life. All the rights and privileges which belonged to them when living are still theirs, undiminished and unimpaired. Their Blessed Saviour still represents them as their advocate, still watches over their interests, still preserves His covenant engagement inviolate; and whatever is meant by being "in Jesus," is meant of them now, even although they are dead, and shall hereafter be fully realized by them when God shall bring them with Him. "Neither life, nor death, nor things present, nor things to come, shall be able to separate us from the love of God which is in Christ Jesus our Lord."

From the intimate and enduring nature of this union there follows necessarily and inevitably another quality which distinguishes Christ and His people, as symbolised by the vine and its branches—viz., *mutual resemblance.* If we examine a growing vine very

minutely and attentively, we shall be struck with the remarkable resemblance which exists between all its parts. They all seem to be framed after the same pattern, and to be mere repetitions of each other. Even in the minor parts of the tree—the leaf, the flower, the fruit, the seed—we find the same wonderful general likeness. This mutual correspondence, however, exists in a perfect state only when the tree is fully and fairly developed. It is modified by a great variety of circumstances, natural and artificial. When the tree is placed in a thick crowded plantation, pressed by others on every side, and prevented from assuming its natural form and proportions; when it grows in poor and unsuitable soil; when it has not free access to the air and light of heaven,—it will not exhibit this feature of mutual resemblance between all its parts so distinctly. Some parts will be stunted, others overgrown, and the harmony and order of the whole will be deranged, but the typical correspondence will still, to some extent, be retained. Applying this quality of the vine and its branches to Christ and His people, we find that the same remarkable resemblance exists between them also. Each Christian bears at every stage of growth some likeness to Christ—to whom he is united by a living faith. In the indistinct—the unformed lines, sketched in the character of the weakest believer, there are some traces of what will be hereafter a full portrait of the altogether lovely One, though as yet rude and comparatively unattractive. The vital change which he has undergone is complete in nothing, but it has begun in all the parts

of his nature. The leaven of regeneration is sending its transforming power, silently and slowly perhaps, but surely, throughout his whole being. The image in which he was created, and to which he is redeemed, is more and more restored in the soul. Yes! each believer is a type or miniature more or less true and perfect of the divine Original; and all believers have a general family likeness; they have features of resemblance to each other and to Christ which cannot be mistaken or concealed, and which prove beyond the possibility of doubt their common origin and mutual relationship. They are not, like the image which Nebuchadnezzar saw in a dream, composed of the most heterogeneous materials; its head of fine gold, its breast and its arms of silver, its belly and its thighs of brass, its legs of iron, and its feet part of iron and part of clay. They are like the vine and its branches, whose every part is typical of the whole. "He that sanctifieth and they that are sanctified are all of one." He is a partaker of their nature, and they are partakers of His. "They are not of the world, even as He is not of the world." He whose name is the Branch requires that every other branch that is grafted upon Him be of the same species and moulded after the same pattern. "Let the mind which was in Christ be also in you." A similarity of character to Himself is the badge and test of discipleship. They must not only receive His teaching, but imitate His example; not only obey His precepts, but imbibe His very spirit. The great object of their union with Christ is to change them into the same image—to make them pure as He is

pure, and perfect as He is perfect. By all the varied dispensations of His providence, by all the dealings of His grace and Spirit, this object is being more and more accomplished.

Various circumstances, however, tend to retard the full development of this resemblance. Unbelief, worldliness, social dissipation, the pressure of cares and anxieties, the luxuriance of earthly enjoyments springing up around, the chilling influence of others, all have the effect of hindering the full transformation into the likeness of Christ. But even in the most favourable circumstances, the sinless perfection of the Great Model cannot be copied entire so long as we dwell in this tabernacle, and groan under this body of sin and death. "Holiness and happiness—to be with Christ and to be like Christ—that blessed consummation of our desires, is indeed beyond the grasp of sinful, suffering humanity." Hope itself cannot compass it, for it knows not what it is. "It doth not yet appear what we shall be, but this we know, that when He shall appear, we shall be like Him, for we shall see Him as He is."

Each part of the vine, however, though a repetition and miniature of the whole in its general outlines and characteristics, has yet some special peculiarity of its own. No two branches are precisely the same in shape; no two leaves are exactly similar in colour and outline. And so with Christ's people. They all resemble each other in general features; they have a family likeness; they are all alike so far as they bear the image of the heavenly Adam. Their faith, their aim, their hopes are one. But they have each some

special divergence from the general type to prove their individuality. This fact is amply illustrated in sacred history, and in the Church around us. In one, Christian reverence predominates; in another, hope; in another, faith; in another, love: the piety of one is retiring, that of another is bold and aggressive. Each one illustrates some special virtue. The manifold grace of God works in no two of them alike. The characters which God's people exhibit; the experiences through which they pass; the circumstances in which they are placed, are in no two cases precisely similar. And this diversity in unity presents in the Christian Church, as it does in the field of nature, the charm of a consistent variety,—each part relieving, heightening, and setting off the rest, and contributing to the harmony and beauty of the whole.

The vine is one of the most graceful of plants. Its beauty is not of a glaring or self-asserting character, but quiet and unobtrusive. It is not possessed of showy-coloured flowers; but is distinguished for the grace of its foliage—the fragrance of its blossoms—the exquisite symmetry of its fruit—and its full, overspreading luxuriance. Every leaf, in its shape, venation, and colouring, is a model of beauty; while painters tell us that to study the perfection of form, colour, light, and shade, united in one object, we must place before us a bunch of grapes. In every country where it is cultivated the vine forms one of the most beautiful features of the landscape; and the sunny South has received the poetic name of "the land of the vine" from the predominance of the vineyards in the scenery. There it festoons the wayside trees with

garlands of fragrant verdure, or covers the trellised cottages with its luscious clusters of golden or purple fruit. In this respect, too, how appropriate an emblem is it of Christ and His people. "I am the vine," says He, who was "the chiefest among ten thousand and the altogether lovely," who reconciled in Himself the extremes of universal excellence, and united the variously coloured rays of moral perfection in one glorious emanation of holiness and love. "Ye are the branches," says He of those whose character and conduct have been moulded after His example,—who, besides the virtue, the goodness, the amiability, the uprightness which characterise the best worldly character, display those higher and nobler spiritual qualities which are the fruits of the Spirit's sanctifying power in the soul. The spiritual vine is indeed pre-eminently lovely, clothed with all its branches, "budding and blossoming with all beautiful human affections"—adorned with the full brightness of its summer foliage, and the full richness of its autumn fruitfulness, standing forth in the sunshine of righteousness—in all its graceful and symmetrical proportions—a spectacle to the world, to angels, and to men. Everywhere it forms the fairest feature of the moral landscape—that which beautifies and hallows all the rest. In the midst of the lurid poison-plants of sin it displays its bland and benign qualities; in the midst of crooked thorns, that pierce the feet, and entangle and bewilder the path, it offers its smooth stem, and shadowing foliage, and refreshing fruit. And even those boasted amenities of civilization, which are usually considered to be the natural fruits of human progress, are but the uncon-

scious influences of Christianity—the modified reflexions of Christ's character displayed by the Church and the believer—the life of Christ influencing society through the Christian community, and through each of its members. Were it not for the healthful moral influences exercised by the vine and its branches, the world would speedily relapse into a howling moral wilderness.

The vine is also distinguished for its fruitfulness. There are few plants that remunerate so largely the labours of the husbandman. It bears fruit plentifully when three or four years of age, and continues to improve in quality and quantity with every succeeding year, often lasting to a great age. Christ was indeed a fruitful vine, whose fruit has blessed, and will continue to bless the world as long as it lasts. While He sojourned on earth He went about continually doing good—instant, in season and out of season, in working miracles of mercy, preaching the Gospel of salvation, and fulfilling the work which His Father had given Him to do. And as the vine was, so must the branches be. "Herein is my Father glorified, that ye bear much fruit; so shall ye be my disciples." What Jesus comes to seek from His disciples is not works, but fruits. Works may be and often are the actings of a legal servile spirit. They are done in obedience to rules and laws. They are not parts of one's own nature as it were. They may be performed perfunctorily, from unworthy motives, through fear, or in order to gratify a love of display, or quiet an anxious, or flatter a vain conscience. But fruits are signs of true life. Wherever they appear,

they show that the soul has in deed and in truth been united to Christ by a living and loving faith. They are the spontaneous natural manifestations of the life within. The soul that has the life and the love of Christ in it cannot help producing fruit. It does so, not by an outward arbitrary law, but by the sweet inward, vital law of life and growth. And therefore it is that the free, unconstrained outpourings of the heart in a godly life—the natural, spontaneous, practical responses of the love of believers to the love of Christ—are more frequently in the New Testament called fruits than works. "Let my beloved come into his garden and eat his pleasant fruits." Fruitfulness is the peculiar distinction and glory of Christ's disciples. It is the result towards which all their efforts tend—the ultimate and highest object of their existence. They are united to Christ, quickened by His Spirit, enjoy all the means and privileges of grace, the dew of Divine love, the sunshine of Divine righteousness, the showers and breezes of Divine mercy, in order that they may bring forth fruit; and that more and more abundantly. Nay, the Husbandman does not hesitate to dig about them and prune them by His afflictive dispensations, in order that on the branches which formerly yielded only leaves may cluster thickly and heavily the peaceable fruits of righteousness. A barren Christian is a contradiction in terms—an anomaly in the spiritual vineyard. Wherever there is life it must go on and on growing from one stage to another; not resting at any one point of attainment, but advancing until it has covered every branch and twig with fruit. Fruitfulness is a

necessity of its nature, without which it must become dwarfed and stunted—must wither and die; an indication of its growing perfection—for there is no plant perfect until it has brought forth all the fruit it can. Faith without works is dead; as the blossom that has become abortive and forms no fruit fades and falls off the tree. There cannot be a worse sign of a vine than when all its sap is expended in the production of leaves and shoots, and of a Christian than when all his grace evaporates in words, and all his faith in profession. Fruitfulness is the great object for which the vine is cultivated; and if it comes short of this, the graces and beauties of its foliage will not be regarded as a compensation—it will be rooted out and destroyed; and so diligence in adding to his faith knowledge, patience, temperance, brotherly kindness, and charity, is the great object for which the Christian is planted in the house of the Lord—rooted in the love of Christ; and if he fails of accomplishing this purpose of his existence, the mere form of godliness will not atone for it, or prevent the dread sentence going forth, "Cut it down; why cumbereth it the ground?" "Every branch *in me* [that is, in Christ, not by a real and vital union, but by a visible and professional union—by an external alliance with His Church, and by the use of His ordinances] that beareth not fruit He taketh away: and every branch that beareth fruit, He purgeth it, that it may bring forth more fruit. . . . I am the vine, ye are the branches: he that abideth in Me, and I in him, the same bringeth forth much fruit: for without Me ye can do nothing."

CHAPTER X.

FADING LEAVES.

"*We all do fade as a leaf.*"—ISAIAH lxiv. 6.

IN the late autumn days, the saddest of the year, Nature is preaching to us a solemn sermon from the most solemn of all texts. The divine voice is saying to her, "Cry;" and there is no need for the question, "What shall I cry?" for the oracle is unmistakeable—"All flesh is grass, and all the goodliness thereof is as the flower of the field: the grass withereth, the flower fadeth; because the Spirit of the Lord bloweth upon it. Surely the people is grass." This lesson is whispered by every bleak wind that moans through the waning wood; it is proclaimed in melancholy murmurs by every stream that wanders through the valley, choked with the relics of former beauty and luxuriance; it is painted in brown and sombre hues on every part of the landscape. The burden of every sound we hear, the moral of every sight we see, is the old, old truth, which finds a ready response in every human bosom, "We all do fade as a leaf." That is the great *commonplace* of the world. It is so trite and true, that it has lost in a great measure the power of truth; and there-

fore God is annually illuminating it to us by the many coloured lights of autumn, and investing it, by the aid of nature's touching pictures, with new power and impressiveness. Every year, at the fall of the leaf, He is spreading before us a great parable, in which our own decay and death are pictorially represented in such a plain and engaging way, that he who runs may read, and he who reads must reflect and profit. And Nature, like a loving mother, going before her timid and reluctant child, in some difficult task, to show it the way and inspire it with confidence, is graciously ordained thus to go before us in her decay every autumn, to show us that we, too, must fade as a leaf, and to cheer and encourage us amid the despondency of such a fate by the assurance that, as with her by a physical law, so with us by a law of grace, life comes by death, and decay inevitably precedes a new and better growth.

Leaves are beautiful objects. Rich in colour, graceful in shape, simple in structure, they are among the most exquisite productions of nature's loom. The earth coyly veils her face with them from the too ardent glances of the sun; and through their silken network of light and shade her homeliest features possess a wonderful witchery. Wherever a green leaf trembles against the blue sky, there the spirit of beauty manifests its presence, and attracts our love; and there, too, like the olive-leaf in the dove's bill of old, it is a token to us that Noah's flood will no more go over the earth. Leaves speak of security and peace; for where they grow the sterner forces of nature are unknown. Down in the valley, where the

wind lulls, and the storm raves less wildly, and the hot sunshine has a core of coolness, they expand in a genial atmosphere of quiet; and from homeless moors, and wind-swept mountain-ridges, and scorching deserts, we enter their shade with a feeling of home-shelter and rest. Summer owes much of the charm of its music and poetry to them; summer would not be summer without them. They laugh in the sunbeams and sing in the breeze, and make the wilderness and the solitary place to be glad. Life under the green leaves is a keeping of the feast of tabernacles; the troubles of the winter-wilderness are over, and the joy and fruition of the harvest-home are nigh. Wreaths for the brow of fame, chaplets for the tomb of love, bowers of happiness for youth and innocence, leaves have a wonderful human interest about them, and are linked with many tender associations of joy and sorrow. We need their mystery and secrecy amid life's naked and garish troubles, ever since Adam and Eve hid themselves from their fear among the trees of the garden. The sight of them is a soothing medicine to the soul's care and anxieties; and when their freshness and fairness fail to charm away the evil spirit, they at least remind us of those blessed trees that grow on either side of the river of life, whose leaves are for the healing of the nations, and under whose shade God shall wipe away all tears from our eyes.

As emblems of humanity, leaves are peculiarly beautiful and expressive. Tongues of nature, they are eloquent with divine teachings, which reach at times the inner ear with a strange power. Man sees his own fate reflected in their short-lived beauty. As light a

hold as they has he of the tree of life. A leaf is the type of a single person; and the whole foliage of a tree symbolizes a generation. The tree sheds its leaves one by one, until at last it is altogether stripped, and stands bare and desolate in the wintry blast, but its trunk and branches remain; so individual men and whole generations die, but the race survives. The leaf is annual, but the tree perennial; and man is frail and perishing, but mankind have an enduring existence. The trunk and the branches of the tree are the abiding works of the frail and transient leaf. All the wood of the tree is formed solely by the leaf; and the size and peculiarities of that wood, are owing entirely to the amount and vital activity of the foliage. Slowly and silently—year after year—generation after generation —the leaf is elaborating from air and rain and sunshine —those solid structures which are destined to outlive it—and to remain behind—when it has fallen and crumbled into dust, as its enduring monuments. And is it not so with man? He is occupied all his life with works that are to survive him. He contributes to the progress of humanity, to the civilization and Christianization of the race—to the subjugation of the natural world; and when he quits this scene, he leaves these enduring things behind him as his memorials and monuments. Then, too, how graphically the varied aspects of the leaf picture the various seasons of man's life! The tenderness of its budding and blooming in spring, when that rich golden-green glints on it, that comes only once a year, represents the bright beauty and innocence of youth, when every sunrise brings its fresh glad hopes, and every night its

holy, trustful calm. The dark greenness and lush vigour of the summer leaf portray the strength and self-reliance of manhood; while its fading hues on the tree, and its rustling heaps on the ground, typify the decay and feebleness of old age, and that strange mysterious passing away which is the doom of every mortal. The autumn leaf is gorgeous in colour, but it lacks the balmy scent and the dewy freshness of hopeful spring; and life is rich and bright in its meridian splendour;—deep are the hues of maturity, and noble is the beauty of success, but who would not give it all for the tender sweetness and promise of life's morning hours? Happy they who keep the child's heart warm and soft over the sad experiences of old age, whose life declines as these last September days go out, with the rich tints of autumn and the blue sunny skies of June! Yes; we live as a leaf, and we fade as a leaf. The inspired prophet says it in God's own Word; nature echoes it through all the longdrawn aisles of the forest; and human experience, from Adam until now, adds its universal yet individualizing illustration—each new case exhibiting some new variety. Let us trace out this analogy, and see what light the picture of nature sheds upon the Bible.

1. Leaves fade *gradually*. The whole foliage of a tree does not fade and pass away at one time. Some leaves droop and wither even in spring, when the rest of the foliage is in its brightest and most luxuriant beauty. Some are torn away in summer, while green and full of sap, by sudden and violent storms. The great majority fade and fall in autumn; while a few cling to the branches all through the cold and

desolation of winter, and are at last pushed off by the unfolding buds of the following spring. There is no tree, however green and healthy, but has a withered, discoloured leaf upon it, ready to drop off at the slightest touch of the breeze. There is no group of flowers so perfect but one or more is faded. Watch the blossoming of one of those plants whose flowers grow in spikes or racemes, and you will find that the lowest blossoms unfold and perish, one by one, as those higher up the stem are beginning to expand; so that on the same stalk you have opening buds, perfect flowers, and brown and withered ones—a mixed state of things surely deeply suggestive to every thoughtful mind. Look at the foliage of a tree at any season, and you will not fail to find the same thing—death in the midst of life—sere and yellow decay streaking the bright greenness and beauty of health. And is it not so with every human generation? Decay and death everywhere and always reign. But all do not fade at the same time. Some die in the spring of life; some are cut off suddenly, by accidents and fatal diseases, in ripe manhood; some fade naturally in the autumn of old age. A few survive their generation, like the last red leaves that rustle mournfully in the winter wind on the topmost bough of the tree—the sole relics of the luxuriant foliage that basked in the sunshine and sang in the breeze of summer. Melancholy indeed is the lot of these aged patriarchs. Their tent of life is a solitary object in a dreary and lifeless desert. Pilgrims and strangers on earth, they linger alone; whilst all those who began the journey of life with them have folded their tents and gone away, and

Ichabod, "the glory is departed," is written upon everything. Many leaves have faded and fallen from the tree of humanity since we first began to expand our bud in the warm sunshine of life. Thousands with whom we commenced our career have gone into the silent land before us. The ground beneath is strewn thick with golden relics of departed happiness. The tree to us begins to assume a bare and wintry aspect. Lover and friend hast thou put far from us, and our acquaintance into darkness. We are now related not so much to the living as to the dead. The grave is no more the residence of strangers and foreigners, but of kindred and friends. Eternity is no longer a cold, bleak, outlying realm of shadows, beyond our sympathy and regard, but a portion of the loved scenery of home; for into it has gone so much of what formed part of our very being—so much of what was dearer than life. And we who still cling tenaciously to the branches must soon go over to "the great majority." "Gradually do we pass from these summer scenes, following each other in rapid succession." Friend after friend departs, family after family disappears, until the mournful record shall be written of us as it was written of the Hebrews of old —"And Joseph died, and all his brethren, and all that generation." A thousand millions of leaves are at the present moment hanging on the tree of humanity; and all these in less than a century will fade and fall off, and their places be occupied by a succession as numerous, to share the same fate. Generation after generation will come and go; tree after tree will fall and perish; forest after forest will disappear;—and

thus it will continue until the cycle of man's existence on earth be complete, and the angel shall come, and swear that time shall be no longer, and death itself shall die.

2. Leaves fade *silently.* All the processes of nature are silent and secret. It is God's glory to conceal a matter. As He veiled His wondrous working for the Israelites at the Red Sea with the cloud of night—and the dawn only revealed the completed miracle—so in the field of nature He reveals to us not processes, but results. Spring steals imperceptibly upon the earth and we are startled like men that dreamed, by the sudden revelation of green leaves and balmy skies almost amid the gloom and snow of winter. The bud expands into the full-blown rose—but the unfolding is done in secret; the star of evening sparkles like a tear in the spot where the sunset died—but no one marked its falling from the dewy eye of heaven. And as with the glory, so with the decay of nature. We know the passage of the seasons only by their changes. The precise moment when nature has reached its culminating point and must descend—when her embroidered web has been woven and must be unravelled—is shrouded in mystery. No boundary-line separates the season of life from the season of death—the full vigour and perfection of summer from the feebleness and languor of autumn—at least none that can be marked by the ordinary senses of man. To-day the forest is green and luxuriant; to-morrow it is faded and desolate. One by one the leaves become discoloured and drop off; but we cannot trace the insidious progress of the blight from its commencement to its consummation, and the first notice we

have of the change is the hectic hue upon their surface. Some of them fade before others, but we cannot tell why; there is no mark to point them out; and when all the foliage is waving and murmuring in the summer breeze, we cannot indicate which leaf of all the rich, green crowd will be the first to wear the impress of decay. Thus fades the leaf—and so silently do we all fade. The king of terrors comes with a noiseless step, shod with wool, stealthily, silently, with bated breath; he is not seen; he is not heard; he is not suspected; till all at once his cold shadow falls upon us, and his dark form stands between us and the light of the living world. We die daily, but the bark still continues fresh and the leaf green, and we know not the progress of the hidden mortality. We bear the seal of death ere we are conscious of it; and we become aware of our doom only when the gradual secret fading of the bloom on the cheek, and the brightness in the eye, and the vigour in the frame, has reached its final palpable stage. No awful handwriting appears on the wall, telling us in the midst of our rejoicings, as it told Belshazzar, its "Mene, mene, tekel, upharsin;" no solemn message from the unseen world comes to us as it once came to Hezekiah: "Set thine house in order, for thou shalt die and not live." Before the work of death begins, we know not which of our friends and acquaintances will pass away soonest. It may be the old and gray-haired, who have nothing left to live or hope for in the world; it may be the sick, who have lingered long on the perilous edge of death, and whose life has been endurance not enjoy-

ment; or it may be the young and healthy, to whom death is a far-off cloud, no bigger than a man's hand, casting no shadow on their sunny horizon. It may be the fragrant rose or the thorny weed—the fruitful vine or the barren fig-tree—the heavenly-minded Christian or the worldly-hearted professor. Who is to be the first to receive the message to pass hence?—we know not; an awful uncertainty rests upon that. The veil that hides it from our view is woven by the hand of mercy. But certain it is that some must go first. The process of decay has begun in many already. The seeds of disease have been sown in their frames, and slowly, imperceptibly, but surely, they are springing up and ripening to the dread harvest. The gray hairs, the feeble limbs, of some, show too plainly that they are in the sere and yellow leaf; and at last, silently, as a leaf falls in the hush of the forest, they will fall from the tree of life, and pass away for ever:—

> "Leaves have their time to fall,
> And flowers to wither at the north wind's breath:
> But thou *all* seasons—all;
> Thou hast all seasons for thine own, O death!
> We know when moons shall wane,
> When summer birds from far shall cross the sea,
> When autumn hues shall tinge the golden grain:
> But who shall teach us when to look for thee?"

3. Leaves fade *differently.* The autumnal foliage is very varied. It is this rich variety that gives a witching charm to the calm landscapes of October, and makes the progress of the month like the stately march of an Orient army, with the splendour of blazing banners, and the wealth and pageantry of

olden story. No two species of trees exhibit the same appearance. They all presented a uniform greenness in summer; but decay brings out their individual character, and shows us each of them in its true colours. One tree, draped in dull and sombre foliage, looks like a funeral pall. Its leaves are covered with brown unsightly blotches; and its whole aspect is melancholy and dreary in the extreme. Another tree looks as though the glories of the sunset had been distilled into it. Decked with glowing hues of crimson, and scarlet, and gold, it lights up the forest like a pillar of fire. It is a picture of beauty, far more exquisite than any it presented in its fresh, green, summer prime. The eye loves to dwell upon it; and the mind forgets, in the enjoyment of its loveliness, that the gorgeous display is but the prelude of death, the last brilliant flash of the candle in its socket, ere it goes out in utter darkness. And are there not similar differences in the way in which men fade and die? In the hey-day of life and happiness they may seem all alike, uniformly fair and attractive. But when death comes, it shows the true character of each. Its approach makes some men gloomy and sombre. It invests them with a dark and repulsive aspect. It clothes them with despair. It discovers and displays to them, in its red all-revealing light, the errors and follies of their life in all their hard reality, without one softening shadow. There is nothing to save them from the sting with which it is armed by sin. They are under the law and under the curse. The righteousness of Christ is not theirs to justify them; His Spirit is not theirs to sanctify them. They

have no title to heaven, and no meetness for it. Oh, there is nothing bright and attractive, nothing hopeful and desirable, in the dying of the impenitent and unsaved sinner! All is dark and despairing—a fearful looking for of judgment and fiery indignation. It is like the sun on a stormy evening going down in gloomy thunder-clouds, leaving no ray of light behind. It is like a green tree changing in autumn into the most sombre and repulsive aspect of decay. But how widely different is the dying of the Christian! Precious in the sight of the Lord is the death of His saints; precious and also beautiful. It is to them the most blessed of experiences. They are never so well situated to glorify God, as in their dying hours. Then they can display the tenderness of His care, the truth of His promises, the supports of His everlasting love, as they can in no other circumstances. While the eye of the body is closing to the beauties of earth, the eye of the soul is opening to the glories that are to be revealed in them: while their hold of all that life holds dear is relaxing, they cling with a firmer grasp of faith, and a closer embrace of love, to the things that are unseen and eternal in the heavens; while the outward man perishes, the inward man is renewed more and more. The day of their death is indeed better than the day of their birth, for, rich with all their treasures of spiritual knowledge and experience—the growth and accumulation of a whole lifetime of discipline—they come to their last hour like the mellow fruit that gathers into itself all the life of the tree, and all the dew and sunshine of summer, and at last bends and breaks the branch

from which it hangs. The idea of death to them has nothing death-like in it. That death which men dread is to them swallowed up in victory. It is but the passing shadow between faith and sight, hope and full fruition, transient and transparent as the last filmy cloud that veils for a moment the sunrise. The chamber of death is none other than the house of God and the very gate of heaven. Oh! the dying of the Christian is not a fading away; it is an apotheosis, a transfiguration, a bursting into blossom. It is a triumph, and not a sadness. It is like the setting of the sun on a calm summer evening, which makes the western sky a-blaze with splendour, and glorifies even the dark clouds that gather round his descent. It is like the changing of the sombre green foliage of summer into the gorgeous brightness of the autumnal hues, investing even the sadness of decay and death with an unearthly beauty. Who, on beholding such a marvellous proof of the transforming and sustaining power of grace, would not exclaim with Balaam's earnestness, and more than Balaam's purpose of attainment: "Let me die the death of the righteous, and let my latter end be like his"? Our life is a vapour that appeareth for a little, and then vanisheth away; but this brief vapour life of ours is laden with eternity, and is a fact so real and grand as to strike the imagination with amazement. We can make it very beautiful or very gloomy. Let it not be to any of us the mere thick mist that broods over the ceaseless machinery of toil and care, or the foul exhalation that rises from the muddy pools of the world's pleasures; but let it be what God intended it

to be, a cloud in the height of heaven, in the world, but not of it; brightened by the sun of righteousness, and assuming fairer and more heavenly hues as it nears the gates of the west!

4. Leaves fade *characteristically.* The foliage that is gloomiest in its unfolding, is most unsightly in its decay; and the leaves that have the richest and tenderest shade of green in April, have the most brilliant rainbow hues in October. The leaf of the sad and sullen ash is the last to kindle its bud, and the first to wither and fall; and its colour, always sombre, becomes blackened and disfigured in decay. The leaf of the linden tree, on the contrary, is beautiful from first to last; softly green in spring; fragrant in summer with delicate frankincense, and musical with the hum of bees, revelling in the honey-dew bloom; and gorgeous as a sunset-cloud in autumn. And so is it with man. He dies as he lives. A life of godliness ends in a saintly death; and a career of worldliness and sin terminates in impenitence and despair. The law of life is, that the fruit shall be as the seed, and the end as the beginning: unless, indeed, the higher law of divine mercy interposes on a timely repentance. And as the fading itself is *characteristic,* so also are the *results* of the fading. The leaves of some trees when they fall, leave no trace whatever behind. The scar left by their removal heals immediately; and on the smooth naked bark of the bough, in winter, there is no mark to indicate that it was once covered with foliage. There are other trees, however, on which the scars are permanent. The leaf drops off, but it leaves a seal-like impression behind on the stem, and no succeeding

growth can obliterate it. Through summer's luxuriance and winter's desolation, the memory of the vanished leaf remains indelibly fixed on the tree, engraved as if with a pen of iron upon the bough which it once adorned. The tree may increase in size, until it forms a grove by itself; but the signet-mark left by the leaf, which fell from it when it was a mere sapling, still cleaves to it in the grandeur of old age. Many of the characteristic markings on the stems of palm-trees and tree-ferns are due to the permanence of these scars, when their leaves have decayed and dropped off. And is not the lesson of analogy here very clear and impressive? How many there are who fade and drop off from the tree of humanity, and leave no trace of their existence behind. They have done nothing to keep their memory fresh and green in the hearts of their friends. Neither by greatness of mind, nor by goodness of heart, nor by pious deeds of usefulness, have they left their mark upon their generation; and when they die, society never misses them; matters speedily relapse into their ordinary routine; even their friends and acquaintances, when the first shock of natural grief abates, never speak of them or recall their actions. Over the vacant space the grass and the weeds begin speedily to spread, and the neighbouring branches to approach till they interlace at last, and we miss no more from the unbroken forest the tree that has been laid low, or perhaps decide that a loss so easily repaired is rather a gain than the reverse. Others there are, large-minded and large-hearted men, who live not for themselves, but for the glory of God and the good of their fellow-creatures, who toil unself-

ishly and unweariedly in the vineyard of the Lord and in the market-place of Satan, striving in the one to plant trees of righteousness, and in the other to redeem those who are sold to sin and death; these when they fade and drop off the tree of life, leave behind them an impression which time will only make deeper—an empty space whose perpetual vacancy reminds the survivors of an irreparable loss. The scar left by their removal no future summer can heal, no subsequent growth of beauty obliterate. It will remain to testify to the large increment of all that is good and useful which they have added to the tree of humanity. The just shall be had in everlasting remembrance. Though the place that now knows them may know them no more for ever, yet those whom they blessed will arise and call them blessed, and the undying moral power of their character and life will produce a more lasting impression upon men's hearts, than any words that fell from their living lips. Their sunset leaves a long-enduring after-glow in the heavens, which makes the world fairer and richer, because such as they lived and died in it. They fade, like all other mortals, as a leaf; but the fragrance of their life still clings to their memory as the scent of the rose lingers in its withered leaves. Love and gratitude confer an immortality upon them. Who would not seek to be so remembered?

5. Leaves fade *preparedly*. No leaf falls from the tree—unless wrenched off suddenly and unexpectedly in early growth by external violence—without making due preparation for its departure. Before the slightest discoloration is seen upon it, there is a secret adequate provision made by nature for the inevitable

hour of its passing away. Side by side with it, even in its summer beauty and luxuriance, it carries the memorial at once of its death and of a new birth. It bears the young bud that is to usurp its place in its bosom, and nourishes it with its own expiring life. This law of the vegetable kingdom is one that knows no exception. No leaf drops till a new one is prepared to take its place; no flower perishes till its house is made ready and filled with seeds. Provision and preparation for the future is the condition on which vegetable life exists. Go to the forest or the field, and examine every tree or flower in this sad season of decay, and you will find to your surprise and delight that "there is as much of life as of death in autumn," —that the elements of future resuscitation and growth are provided for, amid tokens of universal decadence and corruption. Already "another year is hidden along the bough" that hangs its dead discoloured leaves in the frosty air; already another summer is secure among the pericarps of the dying flowers that strew the desolate fields. The leaf and flower bud, which appear to burst forth as the offspring of the reviving spring, are in reality the children of a previous season. They are now formed; and in these bleak cold days they are wrapped up in swaddling bands to guard them from the frost. Yes! every leaf makes provision for the future, and carries the prophecy of the future in its bosom. Alas, how different is it in human economy! Provision for the future is with man not the law but the exception of his conduct. The great majority of mankind live for the passing hour—make the passing world their portion, and have

no hope or wish for anything beyond. They lead a gay summer life, dance in the breeze and laugh in the sunshine of pleasure, and their only object in existence is to enjoy it, forgetful of the coming blight that is to rob them of their beauty, and of the storms and frosts that are hastening to lay them low in the dust. Well may God appeal against such careless, godless ones, so utterly ignorant of the object and end of their life, to the forms of nature that so perfectly obey the divine laws written upon them—"Hear, O heavens; and give ear, O earth. I have nourished and brought up children, and they have rebelled against Me." Nature is sent to teach us by her autumnal parables: and every fading leaf on every tree, with its bud of future growth hid behind it, becomes a solemn text, warning us to "secure while the leaf is yet green, the germ that shall live when the frost of death has destroyed both fruit and flower." As surely as the leaf fades, so surely shall we fade. We imagine that our fading is not near. We put far away the evil day; and therefore we are not duly impressed by the thought. But fourscore years are soon cut off, and we flee away; and how uncertain is our reaching that lonely verge of life, where the flowery meadows and the golden corn-fields slope gradually down into the bare and stony beach that fringes the eternal sea. The coast of death to most is an abrupt precipice; we are cut off in the midst of our days. A thousand unforeseen foes, fatal to life, line our path on either side, and we have to run the gauntlet daily between them. We began to die the moment we began to live. Our very life itself is nothing else but a succession of dying; and every

day and every hour, in the changes within and without which we experience, wears away part of it. Should we not imitate, therefore, the example of the leaf, in which the process of preparation for the future keeps pace with the process of decay? Should we not seek to make daily, life-long preparation for the final, the inevitable consummation of our daily, life-long death? Should we not so count our days that we may apply our hearts to heavenly wisdom?—the wisdom of knowing, and loving, and serving Him who alone can redeem our poor perishing life from its vanity, and change it into the glory and blessedness of a life hid with Christ in God. Apart from Him the industry of a lifetime is but elaborate trifling, "the costly embroidering of a shroud." United to Him our labour is not in vain in the Lord, our works shall endure and follow us. Every leaf on the tree of humanity must fade; but if we are grafted by a living faith in Him whose name is the "Branch," His own gracious promise becomes a living truth to us: "I am the resurrection, and the life: he that believeth in Me, though he were dead, yet shall he live; and whosoever liveth, and believeth in Me, shall never die."

"On the tree of life eternal,
Man, let all thy hopes be stayed,
Which, alone for ever vernal,
Bears a leaf which shall not fade."

CHAPTER XI.

THE ROOT OUT OF A DRY GROUND.

"*For he shall grow up before him as a tender plant, and as a root out of a dry ground.*"—ISAIAH liii. 2.

OWING to their geographical position, the central and western regions of South Africa are almost constantly deprived of rain. They contain no flowing streams, and very little water in the wells. The soil is a soft and light-coloured sand, which reflects the sunlight with a glaring intensity. No fresh breeze cools the air; no passing cloud veils the scorching sky. We should naturally have supposed that regions so scantily supplied with one of the first necessaries of life, could be nothing else than waste and lifeless deserts: and yet, strange to say, they are distinguished for their comparatively abundant vegetation, and their immense development of animal life. The evil produced by want of rain has been counteracted by the admirable foresight of the Creator, in providing these arid lands with plants suited to their trying circumstances. The vegetation is eminently local and special. Nothing like it is seen elsewhere on the face of the earth. Nearly all the plants have tuberous

roots, buried far beneath the ground, beyond the scorching effects of the sun, and are composed of succulent tissue, filled with a deliciously cool and refreshing fluid. They have also thick fleshy leaves, with pores capable of imbibing and retaining moisture from a very dry atmosphere and soil; so that if a leaf be broken during the greatest drought, it shows abundant circulating sap. Nothing can look more unlike the situations in which they are found than these succulent roots, full of fluid when the surrounding soil is dry as dust, and the enveloping air seems utterly destitute of moisture; replete with nourishment and life when all within the horizon is desolation and death. They seem to have a special vitality in themselves; and, unlike all other plants, to be independent of circumstances. Such roots are also found in the deserts of Arabia; and it was doubtless one of them that suggested to the prophet the beautiful and expressive emblem of the text, "He shall grow up before him as a root out of a dry ground."

Commentators usually connect these words with the next clause of the verse, and regard them as implying that the promised Messiah would have no form or comeliness in the estimation of men, no outward beauty, that they should desire Him. This, I think, is a wrong interpretation. The words of the text are complete and separate. They speak not of the appearance of Christ to men, but of His growth in the sight of God. They refer not to His attractiveness, but to His functions; and the point that seems to be most insisted upon is, that His relation

to the circumstances in which He should be placed would be one of perfect independence and self-sufficiency. In the light of this explanation let us look at the three ideas which the subject suggests to us:—first, *the living root;* second, *the dry ground;* and third, *the effect of the living root upon the dry ground.*

1. *The living root.* This emblem is peculiarly appropriate when applied to Christ. He is called the "Branch," to show that He is a member of the great organism of human life, bone of our bone, and flesh of our flesh, our brother born, united to us by blood-relationship, fashioned like as we are, touched with a fellow-feeling of our infirmities, in all things made like unto His brethren, yet without sin. He is a branch of the tree of humanity, nourished by its sap, pervaded by its life, blossoming with its affections, and yielding its fruits of usefulness. But He is more than the Branch. "There shall come forth a rod out of the stem of Jesse, and a branch shall grow out of his roots," is the spiritual language of prophecy relative to the coming of the Messiah; but the figure is speedily changed, and the Branch is also called "the root of Jesse." This language is most strange and paradoxical. It reveals the mystery of godliness, God manifest in the flesh. Jesus is at one and the same time the Branch and the Root, the root of Jesse and the offspring of Jesse, David's Lord and David's son, because He is Emmanuel, God with us, God and man in two distinct natures and one person for ever; deriving His human life by natural descent from man, and possessing Divine life in Himself, and the author of spiritual life to others.

The root of plants growing in a dry ground is the most important part of their structure. It lies at the basis of, and involves the whole plant. The whole growth of a lily, for instance, lies folded up within its bulb. Its leaves and blossoms are only a development, a revelation of what is in the root, only a manifestation of the fragrance and beauty—the spotless purity and attractive grace that are hidden within the apparently dry and unsightly scales of the root. And so Christ lies at the basis of, and involves the whole spiritual life. There is a Divine simplicity in all the works and ways of God. As we can trace the whole system of nature up to one or two simple types and forces, so we can trace the whole gospel scheme up to one form and one force. Christ created the gospel by His work; He preaches the gospel by His words; He is the gospel Himself. His person is intrinsically superior to all the doctrines which He proclaims, and all the blessings which He confers. His individuality takes precedence of everything else. He is the Way; for no man cometh to the Father but by Him. He is the Truth; for the truth that frees and sanctifies the soul is "the truth as it is in Jesus." He is the Life; for he that believeth in Him, though he were dead, yet shall he live, and to know Him is life everlasting. He of God is made unto us wisdom, and righteousness, and sanctification, and redemption; and the believer is said to "put on Christ," and not merely His salvation, to be made "a partaker of Christ," and not merely of His gifts, whether of grace or glory. In short, there are numerous passages in the New Testament which declare

Christ *to be personally* what, in the ordinary language of life, we should say that He had done and taught and communicated. All the individual life of the Christian, with its blossoms of holiness and its fruits of righteousness; all the Christian life of society, with its things that are pure, and honest, and lovely, and of good report, is but a development and a manifestation of the life of Christ in the heart and in the world; a growth and unfolding of the power, the beauty, and the sweetness that are hid in the root of Jesse. And it is assuredly the most precious, as it is the most distinguishing, feature of the Christian religion, that it places the foundation of eternal life in living relations with a living person, rather than in the profession of a creed or the practice of a duty; that under it the believer is "not a man who maintains the doctrine of the Trinity, or who holds justification by faith, but the man who has come to Christ, and is rooted and built up in Him."

One of the principal functions which the root performs in the economy of vegetation is to attach the plant to the soil, and prevent it from moving hither and thither at the mercy of the elements. So Christ is the living root of our spiritual life, connecting it with the whole system of grace, the whole economy of redemption. It is only when united to Christ by a living faith that the soul can lay hold on heaven and immortality. Apart from Him, it is like a weed, sun-dried and wind-wafted, drifting about from place to place—the facile slave of every fickle breeze of doctrine and circumstance, walking through dry places, seeking rest and finding none. In the arid deserts of

central South America there is a strange plant, the *Selaginella convoluta*, a species of club-moss, endowed with very remarkable hygrometric properties. In the dry season, when every particle of moisture is extracted from the soil, it is detached from its growing place, rolled up into a ball, and carried away by the violent equinoctial gales which prevail at the time in these regions, often to very great distances. It remains coiled up in this form for a considerable time; but if carried to a marsh, or the margin of a stream, or any other moist place, it begins slowly to unfold, and spread itself out flatly on the soil, assumes its former vigour and freshness, takes root, develops its fructification, and casts abroad its seed upon the air. When this new situation is dried up, it resumes its old unsettled habits, and, like an adventurous pilgrim, takes advantage of the wind to emigrate to a more favourable locality. And is not this plant an emblem of the man who is detached from Christ, and who therefore wanders from one broken cistern of earthly joy to another, restless, disappointed, dissatisfied? He is wearied in the greatness of his ways, in his manifold journeyings hither and thither in search of true satisfaction. Amid all the resources of modern science and art, there is still the same old vanity and vexation of spirit. Jesus knew well how deep and universal was the experience He was appealing to when He said, "Come unto Me, all ye that labour and are heavy laden, and I will give you rest." We are striving to attach outward things—our possessions, our friends, our enjoyments —to ourselves; but where is our own fixedness?

How carefully does the lawyer draw up the contract, the assignment, or the will, which is to secure to us our portion in this world! What precautions do we take to guard against the changes, fluctuations, and uncertainties of business; but what is to make ourselves secure? How are we to save ourselves from being drifted hither and thither at the mercy of the winds and waves of circumstances? All our efforts to make ourselves centres and roots will be vain. Our centre is Christ; and until we are in Him, we shall never know true peace. Our root is Christ; and until we are rooted in Him, we shall be helpless and lifeless, overpowered by outward things, and disquieted by their terrors. Attached to Him, we shall not be moved. United to Him by a living faith, our hearts are fixed and at rest; we are united to God, to eternal life, and to all the blissful and glorious realities of the spiritual world. We are in Him, who is the root of all life and the centre of all things; and therefore, in all conditions and circumstances, however painful and trying, we enjoy the perfect peace of the man whose soul is stayed upon God, the very peace of God Himself, which passeth all understanding.

Another purpose which the root serves in the economy of vegetation is to feed the plant. Through the spongioles of the root, the plant imbibes from the soil in which it is placed, the needful sap by which it is sustained; and in this simple way the whole important and complicated processes are carried on, by which crude soil is converted into the needful constituents of vegetable matter. For this purpose the

root possesses certain structural peculiarities adapting it to its special functions. The tuberous or bulbous root of a dry ground is provided with a store of nourishment for the support of the plant that is to spring from it. Just as there is provision made for the growth of the germ in the starchy contents of the seed, until it has attained an independent existence; so there is provision made in the nutritive tissue of the bulb or tuber for the support of the plant which it produces. This function also the Root of Jesse performs in the case of those who are rooted in Him. He is the mediator of the New Covenant; the only channel by which spiritual blessings can be communicated to us. In Him dwelleth all the fulness of the Godhead bodily. He purchased all the blessings of redemption by His obedience and death; and in Him they are stored up for the quickening and growth in grace of all who are united to Him. All the promises in Him are yea and amen. His fibres penetrate, as it were, throughout all space, extend throughout all time and eternity, over heaven and earth; and He extracts from every source nourishment that will feed the souls of His people, makes all things to work together for their good. He converts the common blessings of life into covenant mercies—daily bread into shewbread, water into the wine of heaven, ordinary bounties of providence into sacraments, and makes our very senses minister to our faith. It is only through union with Him that the soul can come into contact with the true fountain of its life, with the true sources of its nourishment and growth, that its ever-expanding capacities and never-silent yearnings

can be satisfied. Separated from Him, man is an incomplete creature, a poor blank fragment of existence, rootless, hungry, dry, and withered. United to Him, rooted in Him, having His life circulating as it were through our being, there is no imaginable blessing that is not within our reach. We shall never lack any good thing. So long as there is nourishment in the root, the plant can draw it out; and in this Root there is an infinite and inexhaustible fulness. Possessing Him, we possess all things; for if we be Christ's, all things are ours, the world, and life, and death, things present and things to come; "all are yours," saith the apostle, "for ye are Christ's, and Christ is God's."

2. *The dry ground.* Having thus briefly sketched out the nature and functions of Christ as the living root, let me now glance at the nature of the relation between it and the soil in which it grew up. He is a root out of a dry ground. There is usually a very intimate connexion between a plant and the circumstances in which it grows. Modifications of specific character are produced by varieties of soil; and the wide difference between a wild flower or fruit, and a garden flower or fruit, is entirely owing to the difference between rich cultivated soil and the poor untilled soil of nature. The plants of a dry ground, however, are less dependent upon the nature of their soil than others; they receive from it, in most cases, mere mechanical support and room to expand in, while their means of growth are derived entirely from the atmosphere. Looking at the emblem of the text in this light, we may in the first place suppose the

"dry ground" here to mean that *humanity out of which Christ sprang*. There are many who regard Jesus as the natural product of humanity—the highest development of human nature, the blossom, so to speak, of mankind. But we look upon Him as a divine germ planted in this wilderness, a divine Being attaching Himself to men, wearing their nature, dwelling in their world, but still not of them—as distinct from humanity as the living root is distinct from the dry ground in which it grows. The soil of humanity is indeed dry ground. Sin has dried up its life, its fertility, turned its moisture into summer's drought, and reduced it to perpetual barrenness. The garden of the Lord has become a desert, a dry and parched land wherein there are no waters. Every virtue pleasing in the sight of God has faded and disappeared from off it; and instead thorns and briers have sprung up. Such a desolate and sinful soil, scathed by God's curse, could no more have produced the Saviour—He who was holy, harmless, undefiled, and separate from sinners—than the thirsty sands of Sahara could produce the rich verdure of the river-side, or the frozen wastes of the Pole could nourish the luxuriant vegetation of the Tropics. By the law of natural development, mankind could never have given birth to a character in every way so exceptional as that of Christ. The degenerate plant of human nature could never have produced the "true vine." It is true indeed that a few individuals have ever and anon emerged from the dark chaos of fallen humanity, and exhibited a high type of intellectual and moral worth; but such individuals have been completely

identified with the human race, and have shared in its sins and infirmities. In Jesus, on the contrary, there was a remarkable remoteness and separateness from men. His life ran parallel with man's, but it was never on the same low level; man's life was to his what the asymptote is to the hyperbola which it can never meet, however nearly it may seem to approach. He was indeed born of a woman; He grew from infancy to manhood; He assisted His reputed father in the trade of a carpenter; and passed in and out among His countrymen, to the eye of sense, as a Nazarene, like any other. And yet there was a mysterious something which from the very first separated Him from the human race, and set Him apart as a peculiar being. He proved by His words and deeds, and the whole mode of His life, that He had a higher origin than the human, and more transcendent affinities than those of this world —that He was from heaven while dwelling on earth; a being above mortality while in it; a being separate from sinners while united to them by the closest ties of blood relationship and the profoundest human sympathies. "He lived out in the mould of human conduct and feeling the perfections of God." He was independent of worldly circumstances, and superior to worldly conventionalities. He had no joys on earth save those He brought with Him from heaven. He was alone, without sympathy, for no one could understand Him; without help, for no mortal aid could reach the necessities of His case. Like a desert well, He was for ever imparting what no one could give Him back, slaking the thirst of

others, while compelled to quench His own in the fountain of life which is with God within the veil. He brought everything from above, He got nothing from below. He was indeed a divine scion from a worn-out, sinful, effete human stock; a living root out of a dry exhausted ground, receiving from mankind a body and a nature in which to carry out the work of redemption; but deriving all His life and beauty and fruitfulness from the dews and the sunshine of heaven.

Further, we may understand by the "dry ground" here, the *expectations of the Jews regarding the Messiah.* There are scientific men who believe in the doctrine of spontaneous or equivocal generation. They believe that there is a living principle or self-creating power in nature; that the earth of itself, without seeds or germs, brings forth the vegetable productions which clothe its surface; that every plant is the natural spontaneous product of the particular soil in which it grows. And so there are theologians who assert that Christ was merely the natural product of the age and the circumstances in which He lived; the mere incarnation, so to speak, of the popular expectation of the time. In all their attempts to account for His life, without admitting Him to be a divine person, they bring prominently into view whatever there was in Jewish history, belief, and literature, to prepare for and produce such a personality and character as those of Jesus; they endeavour to show that the condition of the Jewish world, when Christ appeared, was exactly that into which His appearing would fit; and that all these preparatory and formative conditions

did of *themselves*, by a kind of natural spontaneous generation, produce *Christ*. In reply to these views, it may be admitted as an unquestionable historical fact, that the expectation of a Messiah ran like a golden thread throughout the whole complicated web of the Hebrew religion and polity. The whole chronology and genealogy of the nation derived an intense interest from this expectation. Every family hoped to number the mysterious exalted personage, who was to restore the kingdom to Israel, among its descendants. As the ages wore on, the hope of His appearance became stronger and more definite, until, at the time of our Saviour's birth, it was generally supposed that He would shortly manifest Himself. Accordingly, this universal longing and waiting of the people for the Hope of Israel, was actually the cause of many a false Messiah coming forward and claiming to be the expected prince. We read in the Acts of the Apostles of Theudas boasting himself to be somebody; to whom a number of men, about four hundred, joined themselves; who was slain, and all, as many as obeyed him, were scattered and brought to nought: and also of Judas of Galilee, who rose up in the days of the taxing, and drew away much people after him, and who likewise perished. Unbelievers of the school of Strauss and Renan assert that Jesus of Nazareth was one of those false Messiahs. He was fortunate for a while like them; He drew multitudes after Him, and was regarded as the wonder of His day; but in the end He too succumbed to the Roman power. The astonishing success of His cause after death, compared with the oblivion which enwraps

their names, is the only point of difference between them; and therefore He too may be fairly regarded as the product of the popular longing of the time. It is enough to say, that this doctrine of spontaneous generation is no more true in the case of the Plant of Renown, than it is true in the case of any member whatever of the vegetable kingdom. The expectations of the Jews did no more of themselves produce the Saviour, than the soil and climate produce, of their own accord, any particular plant. There was nothing in the age, nothing in the people, nothing in the influences by which He was surrounded, which could by any possibility have produced or developed such a remarkable character as He exhibited. He was a root out of a dry ground; and there was no more relation between Him and His moral surroundings, than there is between a succulent life-full root and the arid sandy waste in which it grows. To Him alone of all men the apothegm of Goethe applies, "Truth belongs to the man, error to the time." The counterfeit Messiahs were not roots out of a dry ground, but, on the contrary, mushrooms developed from the decaying life of the nation. There was a complete harmony between them and their moral surroundings. They were really and truly the products of the popular longing of the time; they agreed in every respect with their circumstances. The prevailing notions concerning the Messiah were worldly and carnal. The Jews expected an earthly king who should revive the decayed national glory; and therefore these pretenders put themselves at once at the head of an insurrectionary movement, assumed all

the pomp and power of earthly monarchs, and appealed to the force of arms against the Roman empire to establish their claims. They fulfilled, or wished to fulfil, all the carnal things that were expected of them. But it was widely different with Christ. The facts of our Lord's appearing and the popular expectations of the time were diametrically opposite. His origin was low and obscure; He wrought during His early years at a humble business; and when He began His ministry, He refused to accept the homage and political adherence of multitudes who were anxious to make Him a king. He proclaimed constantly that His kingdom was not of this world, that it was spiritual, and consisted in humility and self-denial, and He Himself gave an unparalleled example of meekness and self-abnegation. Those who surrounded Him, not only the simple and ignorant multitude, but His own disciples whom He had taught and educated by doctrine and miracle for higher purposes, were continually falling back into low and worldly notions regarding His mission and kingdom; and against these carnal instincts and wishes He had to lift up an urgent testimony throughout the whole course of His life. Surely no candid mind that reflects upon these things, can conceive that such a character as that could have been the mere natural product of the expectation of the times, that such a kingdom as that could have been the mere "natural result of the fermenting imaginations of a fanatical people." So far from being the spontaneous growth of Jewish soil, Jesus was utterly antagonistic to it; He had no vital relations with it; He was altogether independent of it. He

was distinctively and emphatically, in regard to all the Jewish expectations of the Messiah, "a root out of a dry ground."

But further still, we may understand by the dry ground here the *character of the Jewish people.* Nothing can be more marked and striking than the contrast between the character of Christ and the general character of the Jewish nation—between the excellences which He displayed and those which they held in most esteem. It is said that a man represents the spirit and character of the age and the race to which he belongs. He seldom rises above their general level. The character of the whole community repeats itself more or less strongly and clearly in each individual member of it. But here we have a man who not only rose high above the level of His age and nation, but stands out, in all that constitutes true moral manhood, in marked and decided contrast to them. He was descended from the Jewish people, but He was not of them. He was rooted in Jewish soil, but His life was a self-derived and heavenly life. Antecedently, Judæa would never have been singled out as the birthplace of the great Benefactor of mankind. Long years of formality in religion, anarchy in government, and corruption and bribery in the administration of law, had exhausted all the good qualities of the people, drained their virtues dry, and left behind a miserable sediment of meanness and hypocrisy. They were proverbial for their moroseness and avarice; they were contracted in all their views, and bigoted and fanatical in their maintenance of them. That from such a worldly, hypocritical, and exclusive

people, the Saviour of mankind could spring by the natural laws of generation, is simply impossible. And to me it is one of the clearest and most convincing proofs that the scheme of salvation is divine, just because "salvation is of the Jews;" that Jesus is the Son of God, just because He is "Jesus of Nazareth." As a mere Jew, He would have lived and died a Jew, imbued with His nation's narrowness and bigotry; but as God incarnated in the Jewish nature, He rose above every religious prejudice of His people and time—above His training and education under the comparatively exclusive dispensation of Moses, and founded a kingdom intended to embrace all nations and peoples, and tribes and tongues, and raise the whole human race from its moral degradation up to God. Is this, can this be, a mere human development? Is it not, on the contrary, the divine in the human—a living root growing in a dry ground?

This is a great and precious truth. Something has come into this world which is not of it. A supernatural power has descended into nature. A man has lived on our earth who cannot be ranked with mankind. A Divine Being has come from God, to be incarnate with us, and to lift us up to God. A germ of infinite eternal life has been planted in this dying world, to make the wilderness and the solitary place to be glad, and the desert to rejoice and blossom as the rose. Around this most wonderful of facts, groups the salvation of the world, all the ideas and doctrines of redemption; out of the incarnation of the Son of God—this supernatural in the natural, this divine in the human, this living root out of a dry

ground—springs up the tree of righteousness, the tree of life, under whose shadow all who flee to it for refuge are safe from the wrath of God and the curse of sin; whose fruit satisfies all the wants of humanity, and whose leaves are for the healing of the nations. The seed-principle of holiness had been lost out of human nature; the germ of eternal life had been withered in the soul by sin; but into the dry ground, that could bear naturally only thorns and briers for the burning, a new principle of life and holiness has been introduced from heaven, and now the aspect of the barren moral waste is changed. The life which man does not possess himself is got by a union of faith with Christ. The righteousness which man cannot work out by his own merits is stored up for him in Christ, who made an end of sin, and brought in an everlasting righteousness. The fruits of the Spirit—holiness, goodness, and truth, which man himself cannot produce—are yielded as products of grace when rooted and grounded in the love of Christ.

3. *The effect of the living root upon the dry ground.* The roots of the desert, by their extensive ramifications, fix the constantly shifting sands, and prevent them from being drifted about in blinding clouds by every wind that blows. So the Root of Jesse binds the dry ground of humanity by its endless fibres of benevolence and love. The despised and apparently feeble Jesus of Nazareth was lifted up on the cross, and then followed—according to His own prophecy—the drawing of all men to Him and to one another. Sin is selfishness and isolation; the love of Christ is benevolence and attraction. When men ceased to

have any spiritual connexion with the Source and Centre of all minds, they ceased at the same time to have any loving fellowship and communion with one another. When the germ of holiness and love was destroyed in the soul by sin, the world became at once a dry ground, its inhabitants a series of independent units, each selfishly seeking his own ends, regardless of the wishes of others; there was no principle of union to bind its different classes and peoples together; they became a mere heap of sand with no coherence. The very first moment that sin entered into the world, it produced this feeling of repulsion. Adam hid himself from God among the trees of the garden, and at the same time became alienated from Eve; for, instead of seeking to share the burden of guilt, he became her accuser and enemy. When the younger son in the parable turned his back on his father, he wished also to separate himself and his interests from his brother. "Give *me*," said he, "that portion of goods that falleth to me." But the Root of Jesse counteracts this selfishness and repulsion. It binds the separate particles of humanity into one brotherhood. Jesus unites us to the Father, and therefore to one another. He reconciles us to God, and therefore to man. He teaches and enables us to love the Lord our God supremely, and each other with pure hearts fervently. The whole design of the gospel is to restore not only the individual, but the race—to create not only the man of God, but the society of God; and for this end Christians are now trained under Christ to love one another. "By this shall all men know that ye are

My disciples, if ye have love one to another." Without love—practical love for each other—they are not rooted in the love of Christ; they have no other bond of union than that which is merely external and temporary. Those who have forsaken father and mother, and wife and children, for the kingdom of heaven's sake, find new and higher relationships in Christ Jesus. Whosoever doeth the will of the Father in heaven, the same is their brother, and sister, and mother, as in the case of Jesus Himself. They are all comprehended in love—a love utterly unknown in the selfish intercourse of society—for their corporate sensitiveness is so strong, that if one member suffer, all the members suffer with it: if one member be honoured, all the members rejoice with it. And so close is the bond between them and the root in which they grow, that an injury done by them to each other is done to Christ, and a benefit conferred by them on each other is conferred on Christ. "Inasmuch as ye did it unto one of the least of these My brethren, ye did it unto Me." At every step we advance, then, let this love of the brethren gain ground over every other preference. And this growing brotherly love will be a growing proof of our renewed state and advancing sanctification. "We know that we are passed from death unto life because we love the brethren." And it will also be a practical exemplification to others of the supreme loveableness of the religion of Jesus, constraining them to say, with an admiration that will lead to imitation, "See how these Christians love one another!"

But those who are rooted in Christ will extend the

fibres of their love past the soil in which they themselves grow—out into the dry ground of the unloving and unsaved world beyond. The love of Christians is not to be confined to their own society and fraternity. In Christ they have received expansion, not limitation—universal benevolence, not mere party spirit. Christ, the Root, Himself stretched out the tendrils of His intercessory prayer on the cross over His very murderers. Stephen's prayer took in Paul while he was consenting to his death, and keeping the garments of them that slew him. And the same mind must be in all Christ's followers. Seek, while rooted yourselves in Christ, to make others partakers with you of like precious faith. The principle of fraternity in Christ includes those who are yet ignorant of the Saviour, but who may hereafter become Christians. And what a wide field of usefulness is here opened up for you! What a stimulus to Christian exertion! "It is not the will of our Father in heaven that one of these little ones should perish."

The Root in which you are rooted is all-sufficient. Seek to derive all your supplies and endowments from Him—to have in the Lord righteousness and strength—to be complete in Him—to find in Him "the enjoyment of all that you would possess, the realization of all that you would become." The Root is holy; be ye also holy in all manner of conversation. Let your godliness commend itself by its kindliness and gentleness. It is common to hear, as an excuse for the sour humours of too many members of churches, that "grace may be grafted on a crab-stock." But this is not true. The believer is rooted

in the love of Christ, and the fruit of that rooting should be love. Even if the comparison be held as true, the tree that is grafted is expected to yield fruit not according to the stock, but according to the *graft*. It is not the fruits of man's old nature of depravity that you as Christians are to produce, but the fruits of the graft of the new nature; and these fruits are love, joy, peace, long-suffering, gentleness, goodness, faith, meekness, temperance; against such there is no law.

Let all of us strike the fibres of our soul, which are vainly striving to extract nourishment from, and find rest in, the parched shifting sand of earthly persons and things—deep down into this living Root out of a dry ground. Let us seek to be rooted in Him. Let us accept nothing else in exchange for that. Let us seek to verify the promise: "I will pour water upon him that is thirsty, and floods upon the dry ground. I will pour My Spirit upon thy seed, and My blessing upon thine offspring; and they shall spring up as among the grass, and as willows by the water-courses." And thus rooted in Christ, we shall, even in the dry ground of this desert world, daily receive out of His fulness, and grace for grace. The Lord Himself, in the greatest droughts of affliction and temptation, will be as the dew unto our soul, and we shall grow as the lily, and spread forth our roots even as Lebanon.

CHAPTER XII.

AGATE WINDOWS.

"*And I will make thy windows of agates.*"—ISAIAH liv. 12.

OF all the images under which the Church is symbolized, a building is perhaps the most suitable and expressive. The growth of the Church is widely different from the growth of a vine—or the growth of the human body, to which it is often compared. Instead of possessing, like an animal or vegetable production, an inherent power of self-enlargement, and developing by means of an internal vital force from a germ, favoured by the laws of nature and by external circumstances, the Church has no internal power of increase, but every addition made to it is wrought entirely by the application of a heavenly force, irrespective of natural conditions. It is built up, stone by stone, from the level of the earth with much toil and anxiety, with sweat of brow and weariness of brain. It is constantly employed in counteracting nature's forces. The gravitation of sin is against it. The watchful eye of the Architect has ever to be upon it; the builders build with a weapon in the one hand and a trowel in the other; the line and plummet

of righteousness have ever to be applied to it to keep the walls straight, and to prevent the wayward tendencies of each individual stone, and the malignant influences of Satanic agencies from marring the beauty of the general design. Hence the subtle philosophy of the connexion here between the promise and the circumstances of the Church. It is by those very afflictions and tempest-tossings which the Church bewails, that it is built up a splendid habitation of God through the Spirit. By the action of those very antagonistic forces which it has to overcome, it acquires shape and beauty. For, just as dull opaque matter crystallizes into the exquisite forms and colours of sapphire, ruby, and emerald, by fiery convulsions and electric forces that threaten its very destruction, so does the Church develop into a jewelled temple of more than royal magnificence, by persecutions and trials that seem ready to annihilate it. The promise is, therefore, not an arbitrary and capricious one. It is wisely chosen; it is wonderfully suitable. It is not an external addition, but an internal outgrowth. Afflictions are not merely to be followed by an exceeding great and eternal weight of glory; they are to work it out for us. To none else, therefore, could the Lord address these inspiring words, "Behold, I will lay thy stones with fair colours, and make thy windows of agates," &c.; but to the afflicted, the tempest-tossed and not comforted—

> "Knowledge by suffering entereth,
> And life is perfected in death."

The passage in question is obviously written in the

free and flowing outlines of poetry. Inspiration here throws its rays upon the object described through the prism of Oriental symbolism, and, therefore, it is seen surrounded by a beautiful halo of prismatic colours, not in the white light of naked abstract truth. I agree, therefore, so far with commentators, that it should not be regarded as a mere architectural plan, with every part of the building laid out accurately in mathematical order, but as a great symbolic picture. I admit that in one sense its images are general images, framed after the pattern of Eastern hyperbole, expressing the general glory of the Church made perfect through suffering. But still, I cannot help thinking that the significance of the whole picture is very much owing to the significance of its details. I do not believe that there is such a thing in the Bible as an accidental symbol. In the works of nature, there is not a tint in a flower, nor a streak of gold in a cloud, but is expressive of a predetermined design and a fixed law; and I cannot for one moment suppose that in the Word of God there is less perfection and significance of detail. The form of the truth moulds all the outlines of its imagery, however minute; the colour of the truth shines through every fold and fibre of its drapery, however insignificant, and transfigures it. At the same time, as it would be mere guess-work to attach a precise moral and spiritual meaning to each of the images of the context, I prefer regarding the one that forms the subject of this paper more as a motto than as a text, and shall, therefore, be at liberty to treat it freely,—"I will make thy windows of agates."

Agates are precious stones, partially transparent and uncrystallized. They are mere varieties of quartz, variously coloured by admixtures of different earths; although the neutral tints are the most frequent. They generally occur in rounded nodules, or in veins in igneous rocks, dropping out when such rocks decompose by the action of the elements, and being washed down to the places where they are found by mountain streams. They seem to be the product of elements fused by fire; and in this respect they carry out most faithfully the analogy between the condition of the Church and the nature of the promise, "O thou afflicted, tempest-tossed, and not comforted, behold, I will make thy windows of agates." Out of those fiery trials precious media of spiritual vision will be constructed for it.

I. Looking at the emblem in this light, we may suppose windows of agates, in the first place, to mean *windows of faith.* Agates are neither transparent as rock crystal, nor opaque as flint; so neither is faith dim as sense, nor bright as heavenly vision. In spiritual things in this world we have not the clear outlines, and vivid hues, and tangible forms of sight; we have the dim misty shapes of faith, sometimes exaggerated, sometimes diminished, but always more or less destitute of the bright charm and living beauty of the reality. Faith is sometimes clearer than at other times, but at the best it is only a semi-pellucid agate window. Here, strive as we may, we cannot have perfectly transparent windows; we cannot have perfect vision. The shadow of our own selves clouds

our view; the breath of life dims the medium through which we look out on the world. Earth mingles with and tints our purest realizations of things. The very light itself obscures, hides the stars, the grandeur and immensity of the universe. We see through a glass—through windows of agates—darkly. Many things in creation, providence, and redemption, are inscrutable to us; and the wider the circle of light spreads around us, the wider does the dark line of our ignorance extend also and touch it at every point. There are numerous subjects where observation and experience cease to be our guides, and where we grope blindly in the mist. The smallest knowledge of physics soon loses itself in metaphysics; the slightest acquaintance with the world in which we live brings us to deal with other worlds, with astral conceptions which have no objective reality in the world of sense. Objects the most familiar have mysterious relations with the remote and the invisible. Landscapes the most common-place stretch beyond the horizon into the illimitable unknown. Occurrences the most trifling cast a shadow from eternity, or reflect a light from heaven. We may ascend to a lofty standing-point, and bring those purple mountains that on the plain formed the boundary of our view, into the middle or the foreground of our landscape; but it is only to behold other and loftier mountains towering up on the horizon, confining our gaze, and speaking to us of unknown regions beyond. No Alpine peak is high enough to let us see beyond the physical horizon; and no condor-like flight of reason or imagination can enable us to see beyond the mental horizon that

bounds all beyond and behind it in the veil of mystery. There must be an horizon everywhere; and "the explanation of one mystery would only bring forward another mystery that had previously been hidden beyond our view." Much that is to be believed, much that is to be endured, cannot be explained. There are things which even the angels desire to look into in vain. And, considered aright, we cannot complain of this dimness and imperfection of vision. Such as it is, it is admirably adapted to our moral condition. Were our eye endowed with microscopic power, every spot would be a scene of terrors to us; we should be afraid to move; we should lose sight of the harmonies and relations of things; we should lead an insect life. And were our spiritual vision to be made keener and clearer, we should be disqualified for the labours and enjoyments of a life of trial and probation. Many of our duties, if they do not actually result from our ignorance are greatly confirmed by it. We do not know when the day of death shall come, yet we are ever to prepare for it. We are ignorant when temptation may assail us, yet we are continually to watch and pray against it. Eye hath not seen, nor ear heard, neither hath it entered into the heart of man to conceive what things God hath prepared for them that love Him; and yet we are to wean our affections from the solid, substantial objects around us, and to fix them upon these unseen and unknown things. In regard to all mysteries there should ever be an humble submission on our part, whose whole life should be one continued act of faith, to the will of Him who knoweth all things, and whose

guidance we are to accept in the darkness as well as in the light. When the vision fails, and the path is lost, and the torch is extinguished, it is better to wait in faith and patience for the dawn, when the shadows shall flee away, than to follow the *ignis fatuus* of fancy into the bog. And should the approach of day seem to our waiting feverish souls to tarry long, it is surely better in silent meekness to repose upon the Saviour's promise, "What I do thou knowest not now, but thou shalt know hereafter," than to snatch the flints from the ground, and with sparks of our own kindling strive to dispel the darkness. "The secret things belong unto the Lord our God, but the things that are revealed belong to us and to our children, that we may do all the words of His law." And even of these secret things themselves, blessed be God! we see enough to regulate our conduct, though not enough to gratify a prurient curiosity,—we know enough to make us patient and hopeful, though not enough to satisfy pride and paralyse energy and expectation. Though we cannot have the clearness and certainty of perfect knowledge in this dim and misty lower world, we can still have the substance and the evidence of faith. Though we cannot look through windows of diamonds, we can look through windows of agates.

Gazing through these windows we behold things which we see nowhere else. We obtain such a realizing view of God's presence, such an evidence of His perfections, as elevates and spiritualizes our minds, while, at the same time, it humbles us low by the contrast of our own imperfections and unworthiness.

We behold His glory as in a glass, and are changed into the same image, saturated with the reflected light of His holiness, permeated with the warmth and the purity of His love. The "altogether lovely One" looketh forth at these windows, showing Himself through the lattice in all the beauty of His person, the perfection of His righteousness, and the sufficiency of His grace. We have a satisfying and transforming view of His person, His atonement, His intercession, His example, His commands and promises, His government and kingdom, as revealed in the gospel; so that we can enjoy His own prophetic benediction, "Blessed are they that have not seen, and yet have believed." From these *upper* windows of the soul we obtain the widest view of the horizon around us, and see glorious glimpses of the land that is very far off. Looking down from that elevation, how small and insignificant do the things that appeared great from their own level appear; how unworthy of the thought we bestowed upon them, or the anxiety with which we regarded them. From these lofty windows the pleasures, honours, vain pursuits of earth form only a kind of ideal world, a sort of splendid show, a species of cloud land, fleeting and fair as the vapoury pageant that gathers around the setting sun; while spiritual things, that seemed below aërial and unsubstantial, appear great and glorious realities. From that standing-point, the eye looks not at the things which are seen, but at the things which are unseen; for the things that are seen are temporal, but the things that are unseen are eternal. On these *western* windows of the soul, too, the departing sun shines with concentrated

radiance when all the rest of the horizon is wrapped in twilight gloom. It is from thence that another and a brighter world is discerned opening upon our view, while this world is sinking in shadow. It is there that we are blinded to everything around us by a sight of the glory that is to be revealed. And the radiance departs not from these windows, even when the gloom of the dark valley—which obscures all earthly glories—falls around. The lights in them are the last that go out, paled and quenched, as firelight by sunlight, by the cloudless light of the everlasting day; for the sunset of earth is the sunrise of heaven.

II. "I will make thy windows of agates." We may regard, in the second place, these windows as windows of *feeling*. By this it is meant, not that God will smite the smitten, afflict the afflicted, but that He will make those very afflictions which the Church already experiences windows of agates—mediums of communication between the soul and the unseen world—means of deeper insight into, and richer experience of spiritual things. The afflicted Christian is the only one who has just views of life. It takes a long and painful discipline to correct our early impressions, and show us things in their true aspects and relations. We set out at the beginning of our course with exaggerated notions of our own consequence, and romantic ideas of the world around us. We think of it as a paradise made for enjoyment, and allow no serious thoughts or duties to interfere with our pleasures. Imagination crowns all things with her flowery garlands, and renders them fragrant with her own perfumes, and

sheds around them her rainbow light. We are lovers of pleasure more than lovers of God. "Take thine ease—eat, drink, and be merry," is the sum of our philosophy and religion. When all goes well with us, we seem to be looking out through windows of yellow glass, and seeing everything invested with a golden hue: there is perpetual sunshine for us in earth and heaven. We become proud and haughty, cherishing an overweening estimate of our character and position, regarding success and prosperity as the chief and only good, looking down upon those whose lot in life is less favourable than our own. We burn incense to our own net, and sacrifice to our own drag, and forget the Hand that is feeding us. We are self-sufficient, self-dependent, conformed to the world, living for the present, cold, hard, unsympathising. There is a great and glaring want about a uniformly successful man. Fast-rooted in his own pride and forgetfulness of God, and his want of sympathy for his fellow-creatures, he misses everything most dear and precious to life.

But God in mercy and faithfulness interferes. If we will not learn by *faith*, he will teach us by *feeling*. "I will make thy windows of agates." Affliction, commissioned by a loving Father who pities His children, draws down the blind of sorrow over the windows through which we have looked out so long upon the passing and perishing things of the world; and we are thus compelled to fix our attention and regard upon the things within, the things that belong to our peace, which concern us infinitely more than the vain show without. He places right in front of us, between us and the light of the living world, the

dark form of the angel of death—that awful Visitant, of whom we know so little, and, alas! know so much. He baptizes us in the cloud and in the sea; He leads us down the dark valley; He makes the curtains of night to close around us. In numberless ways, by personal, domestic, or relative affliction; by griefs, mental or corporeal, imaginary or real, invisible or apparent; by the disappointments, bereavements, or losses of life, he withdraws us from the world into the dark and lonely upper chamber of meditation, and makes our life no longer an outward bustling life of action and enjoyment, but a quiet inner life of reflection and thought. And oh! what strange and startling disclosures are made when the windows are darkened, and the gaze is turned inward; and the eye, accustomed to the light, dilates in the gloom, and sees objects distinctly. Those things that seemed innocent and harmless in the daylight of health and prosperity, inspire fear and terror when seen invested with the unearthly shadows of the night of sorrow and death. Our outward life may have been pure and blameless, and it may have been our earnest desire to grow in grace and in likeness to Christ; but until we looked through the agate windows of affliction we did not suspect that there was so much self-seeking, self-admiration, self-dependence mingling with and polluting our holiest services, our costliest sacrifices. There may have been no outward signs of spiritual declension apparent to our fellow-Christians; we may have been as diligent in the discharge of every religious duty as ever; but the searching tests of affliction reveal to us how much of

the old leaven of corruption is still hid in our hearts —how cold and grey are the ashes on the once burning altar of devotion and love—how the damp air of worldly conformity has rusted the once polished mirror that gave back the image of Jesus only—how the sight of evil has photographed its own dark likeness on our sensitive souls. Oh! there are many humbling discoveries made of secret, unsuspected, unrepented sins; and the painful conviction forces itself slowly upon our minds that we have made less progress in the Christian life, that we are less spiritually-minded, less meet for heaven, than we imagined. We are made a wonder and a grief to ourselves; and with deep self-abasement and self-renunciation we bow down at the foot of the Cross.

And so is it also in regard to external things. Through the dim windows of affliction how changed is the aspect of the world, how cold, and grey, and desolate; all its radiant glow departed; all its beauteous hues reduced to one dull leaden sadness. The tears of sorrow are like spiritual lenses, showing us the world in its true character as a poor, empty, unsatisfying inheritance. One glimpse through the agate windows of sickness, bereavement, or adversity will impress us more with the vanity of the world's portion, and of a life of sense, than all that the most pensive poetry ever sang, or the most cynical philosophy ever taught. But affliction brings its own precious compensations with it. Rich issues unfold from its seeming poverty; the tearful cloud is painted with a rainbow; the waste lonesome night is made cheerful with songs and radiant with stars; amid the

darkness and emptiness of earthly scenes the glories of the New Jerusalem shine forth with a new and surpassing lustre. The outside of a stained glass window looks dingy and unsightly; it has no beauty or attraction. And so the coloured windows of pain, sickness, bereavement, to those who look at them from without, from the busy street of the world's pursuits and pleasures, may appear gloomy and uninviting. But within, to God's true children, worshipping in that most solemn of temples—the temple of sorrow—where all earthly clamours are hushed, and all hearts are awed into earnestness and devotion, what a grand and radiant sight is disclosed by these windows! The blue sky is concealed, but a golden glory floats around; the sunshine is dimmed, but dimmed into the radiance of ruby and sapphire, of emerald and topaz; the common familiar sights of earth are obscured, but painted in hues of living light on these windows—hues that bathe the soul with their splendour—are the sublime scenes of the life and death of the Redeemer—scenes well fitted to hide the world by their overpowering glory.

"I will make thy windows of agates;" not bright and transparent, for our weak eyes, dimmed with pain and weeping, cannot bear the strong sunshine; not dark and opaque, for the soul climbing up and straining to look out and see the light behind the cloud—the beauty beyond the shadow—and baffled in its efforts—would fall back upon itself morbid and despairing. They are windows of agates—neither transparent nor opaque—but mercifully tempered by Him who best knows the requirements of each individual

case, and who in all our afflictions is afflicted. How soft and subdued is the light they admit, inexpressibly soothing to the soul which affliction has made tender! Through the *smoked glass* the most delicate eye can look long without shrinking upon the Sun of righteousness. There is no garishness jarring with the sorrow, no dazzling lustre scorching and bewildering the soul, but a mild moonlight radiance, exquisitely harmonising with the loneliness and darkness within. We draw down the blinds of our windows, when the sun is shining in too strongly into our rooms; and so God modifies the sunshine of this world's beauty and joy by those agate windows. How expressive an emblem are they of the peace and content which fills the heart when all the wild questions that come between our faith and heaven are silenced by the voice of love, "Be still, and know that I am God;" that lying calmly, feeling that we are safe, under the *shadow* of the Almighty's wings; that quiet inward look of confidence to the Eternal Power that guides and upholds us; that child-like surrendering of our capricious will, to the wise *counsel* of His will who doeth all things well; that chastened seriousness of spirit; that prayerful anxiety after increased spirituality, which in all cases are the blessed effects of sanctified suffering. The character of the Christian is beautifully mellowed; and a sweet bloom of humility and tenderness takes the place of former sourness and harshness. His views of life are no longer grand and ambitious. He is satisfied with humble things. He is pleased to be without the sunshine, if he has a quiet grey sky over him; and he

is content to resign the pomp and glory of summer for the mystic dimness of pensive autumn. He feels that he is not adapted for perfect happiness, for continuous joy in this world; that it is too tropical a clime for his spiritual health; that he grows best in the temperate zone of contentment. He regards the world as a scene neither of joy nor sorrow, but as a place of discipline for a better. Life is neither bright nor dark to him, but "the evening of preparation" before the eternal sabbath.

III. We may, in the third place, suppose agate windows to be windows of *spiritual character.* In admiring a piece of beautiful scenery, we find nothing in it except what we ourselves brought to it. There must be beauty in the eye before it can be seen in the landscape. Nature wears the colour of the spirit; and her charms are reflections of charms within ourselves. In vain does the grandest combination of mountain and plain, forest and stream, appeal to an eye and mind that have no appreciation of scenery; while to a lover of beauty, such an exhibition will furnish the deepest and purest pleasure. It is so also in moral things. To the pure all things are pure; while the polluted heart finds impurity in the most innocent things. The highest moral excellence is lost on him who has no corresponding quality in his own breast; and there can be no real companionship or sympathy between the good and evil. So also in the spiritual world. Its objects become real, tangible, true, worthy of love, and capable of influencing us, only so far as we ourselves are spiritualised. There

is deep significance in the words of our Saviour, "Blessed are the pure in heart: for they shall see God." "If thine eye be single, thy whole body shall be full of light." There is no window so clear as holiness of character, spirituality of mind, purity of heart, singleness of aim. There is nothing more remarkable among the experiences of every-day life than the clear-sightedness, the freedom from painful perplexity and distracting doubt, which results from a pure spiritual character. The holiest saint has, by virtue of his holiness, the closest communion with, and the deepest knowledge of, God,—the clearest insight into the nature and design of His providences, which he can, not merely *spell backward* like a Hebrew book, but even understand while they are being accomplished. Truths in the Bible, doctrines in the gospel, events and occurrences in daily life, that are dark and mysterious to others, become irradiated with the light of his own spirit; and the light of his purity, like the light issuing from the glow-worm, makes all things plain to him.

Agate windows are most expressive symbols of our spiritual character. The purest agates, as I have said, are not perfectly transparent; they are only semi-pellucid: while the great majority of specimens are clouded with dim spots, and streaked with dark lines. And so the purest spiritual character in this world is imperfect, is stained with sin; while the great majority of Christians have many weaknesses and infirmities. They are really sanctified in every part, but completely renewed in none. Divine grace has transformed them in the renewing of their minds, but has

not so thoroughly dissolved native selfishness and worldliness as that they will not mar and mystify the whole character. The remains of corruption still sadly streak the purity of their nature and profession. Their virtues are cloudy and indistinct; their religious views coloured by prejudice and passion. The flesh lusteth against the spirit; the law in the members wars against the law in the mind. "Perhaps it is no more possible that a son of Adam should exhibit perfection, than that a crystal formed out of mineral matter should transmit light without intercepting some of its rays." The windows of our spiritual character are agate windows, white and clear through the reflected purity and inwrought holiness of Christ, but dark and stained by admixtures of earthliness and sin. The essential transparency remains, but objects seen through it are dim, distorted, and discoloured. Our indistinct and imperfect views of God, of providence, of the scheme of grace, of the eternal realities and transcendent glories of a perfect state—are owing to the imperfection of our own spiritual character, and the imperfect affinity of our hearts for what is best and purest. And if we do experience a growing enlargement in our apprehensions of Christ and of things unseen and eternal in the heavens; if the mists seem to be clearing away from around us, we may be certain that the expansion and brightening of our spiritual vision is the result of an increasing purity of character, and will be the cause of a purity more perfect still: until at last when presented faultless before the presence of God, without spot, or wrinkle, or any such thing, we shall

see no more through a glass darkly, but eye to eye and face to face, and know even as we are known. We shall see Christ *as He is, because we shall be like Him,* pure as He is pure, and perfect as He is perfect.

These windows of agates are of great practical importance. The principal use and design of ordinary windows in a dwelling is to admit light into the rooms, so that the inmates may see to perform their various household duties. And so, the use of these windows of agates, whether they be windows of faith, of feeling, or of spiritual character, is to let the light of heaven shine in upon our life, that we may discharge our various duties as members of the household of faith, that we may act our part as the children of the day and the light. We are not to sit all day long with folded hands at these windows, looking out listlessly or sadly, in mere religious reverie, or in despondent abstraction. The light which we get through them is given to us to *work,*—to work out our salvation with fear and trembling,—to work while it is called to-day, for the night of death soon cometh, and "those that look out of the windows shall be darkened." The light of heaven itself is given for usefulness as well as for beauty. It warms and fertilises the earth, and ripens the corn. So let the light which streams in upon us through these windows of agates—costly light obtained from faith tried in the furnace; lambent light gleaming from painful afflictions, from the decays of nature; sparkling light struck from sore struggles with sin and self; light coloured by the experience through which it has passed; let that light warm, and quicken, and ripen

our souls, and make us more meet for the inheritance of the saints in light,—for the communion that shall be eye to eye, and face to face for evermore. Let the light that radiates from the Cross and the Throne shine upon our joys and sorrows, upon our home and grave, and make them holy. And let us ever remember that the *reality* of our belief in God, in Christ, in immortality, in heaven, is proportioned to the measure of earnestness and diligence with which we live and prepare for them.

CHAPTER XIII.

STONES WITH FAIR COLOURS.

"*Behold, I will lay thy stones with fair colours.*"—ISAIAH liv. 2.

NATURE'S temple is not a hueless, monotonous structure like the pyramids of Egypt. It is richly decorated. It is overlaid with chaste and beautiful ornamentation. Every stone is painted with fair colours, accurately toned, and in perfect keeping. On the top of every pillar is lily-work. Not a rock that peers above the surface of the earth but is clothed with the rainbow tints of moss and lichen; and wreathed with the graceful tenderness of fern and wild-flower. Every mountain is clothed with the variegated verdure of forest and pasture, blending gradually upwards into the sober gray of crag, and the silvery whiteness of snow, and the quiet blue of the cloud-flecked sky. And when the living hues of plants are absent, there is compensation in the rich colours of the rocks, or in the bright reflections of the heavens. The brilliant crimson of Sinai's granite and sandstone cliffs makes up for their naked sterility; and if the mountain-ranges of northern Europe are destitute of the emerald verdure of the Alps, they are covered instead with purple light as with a robe,

and gather out of the sky at sunrise and twilight hues softer than the plumage of a dove, and more radiant than the petals of rose or violet. Even works of human art are decorated by nature with a picturesque glory of colour and light, in harmony with her own landscapes. Like a loving mother she takes back into her bosom the building that man has abandoned, and clothes its garish nakedness with a Joseph's coat of many colours. The castle or the abbey, left untenanted, falls into ruin; but Nature—whose profound peace succeeds all strife of man, and whose passive permanency mocks his false perishing creeds—steps in to claim her reversion; and wherever her soft finger touches, there new beauties spring up and shame the artist's proudest triumphs. His frescoed walls she obliterates with brighter pictures and nobler lessons of wall-flower and pellitory; and over his sculptured arches and leafy capitals she twines her ivy in shapes of living grace, and hues of lavish richness, such as no art of man can imitate.

As Nature deals with the materials of her framework, so the Divine Artificer deals with the living materials of His spiritual temple. "Behold, I will lay thy stones with fair colours," He says to His Church, afflicted, tempest-tossed, and not comforted. Every stone that is fit to be built into the walls of His holy habitation is richly sculptured and decorated. He leaves none in the meanness and vileness of their natural state. He digs them out of the fearful pit and the miry clay that they may be chiselled and polished, so as to be ornaments of the structure in which they stand. He makes the Sun of righteous-

ness to shine upon the dark vapour-cloud of their nature, and thus paints it with the rainbow hues of grace. Black in themselves, He makes them comely in the reflected light of his love. From the moment that the favour of God is restored to them, they are wakened to a new existence and a better principle. Righteousness is imputed to them that sanctification may be wrought out in them. It becomes His task, it becomes theirs, to restore in their hearts His obliterated image; to mould their lives in conformity with the perfect Example; to begin the transformation which can be perfected only in eternity.

Believers are earnestly enjoined in Scripture to adorn the doctrine of God their Saviour by a walk and conversation becoming the gospel. But how? it may be asked. There are some things so perfect in themselves that they are injured, not improved, by any touch of man. Who can give a purer whiteness to the lily, or gild the burnished gold, or make more lustrous the sparkling diamond? We cannot improve upon nature; we cannot adorn it in the sense of making it more perfect; but we can explain it, we can make use of it for spiritual imagery, we can exhibit it in new lights, and display it in a thousand ways before unknown; so that in the exquisite setting of the poet's verse it may shine with even more than its native charm. And in the same way we can deal with the doctrine of God our Saviour. We cannot improve the gospel of Christ. It is all perfect—all complete—wanting nothing. God said again and again regarding Jesus, "This is my beloved Son, in whom I am well pleased;" and He himself, looking

back from the cross upon the whole course of His obedience and suffering, said with His dying breath, "It is finished;" indicating not merely the completion of His work, but also its perfection. It is so exquisitely fair and proportioned, that it stands in need of no embellishment; it is marred and destroyed in its nature and effect by any additions that man may make to it. But though we cannot improve the doctrine of our Saviour, we can make its power upon our own heart and life visible; we can explain and manifest it to others with such illustration and enforcement as may be in our power; and crown it with the history of what by it God has done for our soul. We are to clothe the spiritual life of the gospel —the precepts, the example, the atoning death, the justifying righteousness of Christ—with an outward conduct becoming its purity and dignity. We are to embody the spiritualities of the unseen life in forms of daily walk and conversation, such as will worthily represent their glory and grace. A beautiful character impresses itself upon the very features of the body, so that looking upon the lines of the countenance we can read the soul within, and are attracted to admire and love it; and thus should the life of faith within—the reflex loveliness of Christ's character in the soul —exhibit itself in the homely garb of our outward every-day life; in order that those who cannot see the seal of the Spirit—the inward evidence of the doctrine of Christ, which no man knoweth saving he that receiveth it—may see its outward luminous sign in a living epistle, known and read of all men. Every Christian's life should be like the opal, exhibiting in

its pure transparency the beautiful hues of grace; or like a prism, refracting the clear bright light of heaven into a seven-coloured spectrum of honesty, truthfulness, purity, kindliness, meekness, heavenliness, usefulness.

"Behold, I will lay thy stones with fair colours." Three questions here suggest themselves: 1. What are these fair colours? 2. What are their properties? 3. How are they produced?

1. What are the fair colours with which the Christian character is adorned? *Humility* is one of the most conspicuous of them. It is the soft purple hue of the lowly violet, hid among its leaves, and known only by its fragrance; of the fruit when it is ripest; of the hills when most saturated with sunset light, and most like heaven. It is the ornament which, in the sight of God, is of great price; it is the secret of true refinement and distinction in the eyes of men; it is the glory of the inner man renewed in sanctified self-denial and self-forgetfulness. By nothing is the genuine believer distinguished from the mere formalist and hypocrite more than by his humility. In his unconverted state he saw only the weaknesses and faults of his outward conduct, and was disposed to treat them lightly, and to find a ready excuse for them; but now he looks also at the corrupt thoughts and sinful feelings of his heart, and is full of shame and self-reproach. Formerly he regarded others as worse than, or only on the same moral level with, himself; but now he is ready to esteem all others better than himself. While to the eyes of the world he seems the chief of saints, he can only think of

what grace has done for him, and call himself "chief of sinners." Like Moses on the mount, who "wist not that the skin of his face shone," a glory radiates from his life which is unknown to himself; and the riper his Christian character, the richer is the purple bloom of humility which spreads over it.

Patience is another of the fair colours of grace. It is the tender green of the grass, which, through summer's heat and winter's frost, remains unchanged, which may be trampled under foot and injured in every way, and yet retains its vitality unimpaired. The world, in its loud bustle and ardour of action, has no appreciation of this quiet and retiring grace; but it is especially valuable in the estimation of Him whose own kingdom was won by patience—patient enduring, patient suffering. It is most difficult of acquirement, because most opposed to the proud rebellious nature of man, impatient of all restraint and mystery, eager for present enjoyment, sensitive to every injury and disappointment. To subdue the angry risings of nature when wronged; to bear long, weary suffering uncomplainingly; to keep a calm serenity of spirit amid trying circumstances; to lie meekly behind every difficulty and mystery that our reason cannot surmount; to "rest child-like on the one visible arm of our Heavenly Father, though we cannot see distinctly where the other and outstretched arm is pointing;" in short, to *wait* for the salvation of our God—this is hard for flesh and blood, even to the holiest saint that has been longest under discipline. But when in these things the grace of patience is exhibited, we regard it with a wondering admiration,

as we do the patch of green grass that struggles for existence on the naked rock, or the wan flower that grows on the chill edge of the melting glacier; and it exercises a powerful though unconscious influence for good upon all who come within its sphere.

Benevolence is another of the fair colours of grace. It is the quiet blue of the sky, which shines upon the just and the unjust, which sends down rain and dew upon the evil and the good. This is the virtue which counteracts the natural selfishness of the heart, and takes us out of ourselves. It is by the uniform and enlarged exercise of it that the disciples of the Lord are distinguished from the people of the world, who are ever intent only upon their own interests and pleasures—that they make their light so to shine before men, that others seeing their good works may glorify their Father who is in heaven. It is by their benevolence that they are assimilated to the Universal Giver, whose tender mercies are over all His works, and are never exhausted — to the compassionate Saviour, who though He was rich yet for our sakes became poor, that we through His poverty might become rich, and whose meat and drink on earth was to go about continually doing good—to the holy angels, whose happiness is increased by seeing sinners repenting on earth, and by being sent forth to minister to the heirs of salvation. This blue air by which the spirit lives, without which it becomes asphyxiated, does not reach beyond the confines of earth. It is a grace, a privilege unknown in heaven, and therefore the more diligently to be cultivated here.

Zeal is another of the fair colours of grace. It is

the ruby hue of the blood which circulates through the veins, and animates the whole body with life and vigour. It is the crimson heat which energises or melts everything before it, and pervades all with its own glow. It stimulates to the performance of every duty, infuses life into every experience, fervour into all devotion, spirit into all work, and overcomes difficulty as fire overcomes every resisting object.

Moderation or *temperance* is still another of the fair colours of grace. It is the golden mean between two extremes—the safe though narrow path between opposite evils that come very close to each other. It is the soul's centre of gravity; the ancient Delphic precept *μηδὲν ἄγαν*—"Not too much of anything." Many of the faults of the Christian character are "virtues overflowing their crystal basins and running to injurious waste," or graces run to seed, that, amid their own unsightliness, remind us of the beauty they have overpassed. Moderation or temperance keeps everything in its proper place—preserves the even balance of the sanctuary between feeling or doing too little and feeling or doing too much—between being in the world and yet not of the world.

All these and other graces are summed up in *charity*. As every lovely hue is light, so every lovely grace is love. This is the rainbow which gathers up and harmonises all other qualities, and bends its divine beauty over the whole life of the Christian. It is the genus of which all the Christian virtues are the species. Patience is the attitude of love, zeal is the energy of love, humility is the aspect of love, benevolence is the acting of love. Faith worketh by

love, the fruit of the Spirit is love, the end of the commandment is love, God is love, heaven is love. Wherever charity—supreme love to God and sincere love to man—operates, it is a sensible proof to every Christian of the reality of his faith; and wherever he sees it operating in others, moulding their character, elevating and purifying their life, he sees a reflection —faint, indeed, and blemished by reason of the earthliness of the material, but still faithful—of the Divine image, and "has a vivid emotion enkindled in his bosom, as if the great Original of all perfection stood dimly revealed before him."

These, then, are the fair colours with which God lays the stones of His spiritual temple, and by which the Christian adorns the doctrine of his Saviour, and makes it attractive to others. The fair colours of a patient spirit, a humble mind, a useful, consistent life, have an irresistible fascination, which often leads from admiration to imitation. When the Christian's spiritual life blossoms out into whatsoever things are pure, and honest, and lovely, and of good report, it proves its divine origin, and adds conviction and force to his testimony and commendation. Men *see* what his religion has done for him, and what it will do for them.

2. What are the properties of these fair colours? They should be *harmonious*. They should be developed proportionally, so that each, instead of detracting from, may add lustre to the other. When the apostle Peter exhorts all believers to add to their faith, virtue, knowledge, patience, godliness, brotherly-kindness, and charity, he employs a word in the original Greek (ἐπιχορηγήσατε) which signifies *to lead*

a chorus or band of musicians. The idea involved in the expression is, that perfect harmony should exist between all these virtues, as between the notes of a piece of music, each enhancing the effect of the other. There is harmony in colours as well as in sounds; we see an example of it in every object of nature; and when the proper hues are associated together, the complementary ones contrasting and harmonising with one another, the effect is exceedingly pleasing. And as in the field of nature, so in the Christian character, all the graces should blend in such a way that the effect of the whole may be to the eye what sweet melody is to the ear. Were this the case, no more beautiful or convincing exhibition of the work of the Spirit could be given to the world. Like the four rows of precious stones in the breastplate of the Jewish high-priest, each jewel shining by its own coloured light, and yet contributing to the brilliancy of the whole, this breastplate of righteousness worn by the Christian would invest him with a sacred character, make him an interpreter of the oracles of God, and an instrument of salvation to men. But, alas! how rare is such a symmetry of the graces in the Christian character; how seldom are the stones of the spiritual building laid with colours that harmonise with one another. Graces that charm us by their beauty lie close by the side of defects that repel us. The good qualities are overshadowed by glaring weaknesses. The blue of love may be placed side by side with the sickly green of envy and jealousy; the purple of humility with the red and angry glare of passion. What virtue is there that does not at

times sin against its fellows? What Christian is there so perfect, that we have not to say of him as our Lord said of the Asiatic churches, after enumerating a long list of their good works, "Nevertheless I have *somewhat* against thee." As faults, alas! are more observed in this censorious world than graces, the inconsistencies inherent in such a character go far to neutralise our esteem for its excellences; and even the best and most devoted Christian, owing to some disagreeable peculiarity, may be useless as an example, and shunned as a friend. How often do we hear with pain the taunt, for which there is too much occasion, "Your religious people are no better than others." How often do we see in the people of the world, who make no pretensions to religion, a dignified uprightness, a polished amiability, a noble self-denial, a generous liberality, very strikingly contrasted with the sour humours and defective conduct of some of the children of God! This strange mystery has puzzled and proved a stumbling-block to many a one. "Woe unto the world because of offences." How careful, then, should the Christian be to give no cause of offence except what is inseparable from the Cross of Christ, to cultivate and exhibit the harmonious development of all the Christian virtues!

But though the graces are thus possessed by the believer in various degrees of perfection, yet in every person some one or other is predominant, becomes so conspicuous as to colour the rest, and give the whole character its prevailing hue. "The elementary principle of faith," as Isaac Taylor well remarks, "common to all believers, receives a diversity of colour from its

combination with the peculiarities of the individual mind in which it lodges." Flowers grow in the same sunshine, but how different are their hues. Stars shine with the same light, but one is blue and its companion is yellow; one is green, and another red. Crystals are created by the same electric forces, and are frequently composed of the same primary substances, but their colours and values are different. And so among Christians, placed in the same circumstances and exposed to the same influences, there is a similar variety. Each individual is so constituted as to reflect some one or other of the rays of the Sun of righteousness more strongly than the rest, and by the virtue thus produced he is distinguished. The manifold grace of God creates in some patience as the predominating quality, in others humility, in others benevolence, in others zeal, in others love. And it is for this reason that we are commanded to *prefer* one another in honour; to esteem others *better* than ourselves, for the sake of those qualities which they possess, and in which we are lacking. The ideal type of perfection is to be found in no individual character, but in all God's saints collectively, each contributing to the harmonious whole the quality that distinguishes him, and all united together by charity, the bond of perfectness. The New Jerusalem above will be a glorious city, because *there* shall be gathered together, in varied but harmonious splendour, the brightness of the diamond, the ruddy flame of the topaz, the deep green of the emerald, the shining gold of the jasper, the milk-white filminess of the onyx, the heavenly blue of the sapphire, the

lovely violet of the amethyst, the burning changes of the opal, and the soft beauty of the pearl!

The fair colours with which God lays the stones of his spiritual temple are not *superficial.* God abhors and man despises the fair colours of a religious profession that stand out, as it were, above the surface of the nature like the *appliquée* of the embroiderer, instead of being interwoven with the stuff so as to become a part of it. Mere outward decorum and religious decency are not what God requires, though they are too often, alas! what is presented to him in lieu of the beauties of holiness. It is easy to assume the character of God's people, to imitate their manners, to use their language, to conform to their habits. It is easier to paint a flower than to grow one. The lustre of the glass can be produced in a few minutes by man's agency; but the radiance of the diamond takes unknown ages to develop in the bowels of the earth, under the subtle action of Nature's most powerful forces. The fair colours of grace are of slow growth. They do not spring up quickly, but are wrought out through long weary days of discipline, as the flower grows a long time in dull uniform greenness, through storm and sunshine, before it is crowned with the rainbow blossom. Disease and death often assume beautiful hues. Consumption's cheek wears a brilliant hectic flush; autumn's fading woods are gorgeous in their loveliness; and a phosphoric gleam, seemingly most ethereal and unsullied, hovers over matter in a state of decay. But the fair colours of grace are not the iridescence of spiritual corruption and death, but the iridescence of spiritual health and

life. All is thorough and enduring. There is no plating, or enamelling, or veneering. Grace works from within outwards, renews the heart, and thus tranforms the life. The righteousness of God is not only *upon* his people for justification; it is also *in* them for sanctification.

3. How are these fair colours produced? God is their author. It is He who says, "I will lay thy stones with fair colours." They are not the spontaneous products of our own corrupt nature, nor even the forced growths of our own careful cultivation. Man is by nature vile and polluted; and can darkness originate light, corruption purity, evil good? It is the sun that gives light to the flower, and paints it with all its bright and varied hues. The chemical processes which its rays set in motion form the leaves and blossoms, and so arrange the surfaces that they reflect various hues from his light shining on them. And so is it with the believer. It is the same Sun of righteousness which raised him from the dead and animated him with the power of a divine life, which clothes him with the beauties of holiness. All evil is from ourselves, and all good is from God. If holiness comes into the nature of any one, it comes from above and from without. There is no grace in us which has not been formed by the Spirit. We have no true spiritual life; we are incapable of performing one good act, and exercising one spiritual faculty, apart from his gracious influence. Without his new-creating power there would be no life, no holiness in the soul of man; just as there would be no justifying righteousness without the obedience and death of Jesus.

It is only when He comes and dwells in our souls, and makes our bodies his temple, and fills our minds with his light and our hearts with his love, that the fair colours of grace are diffused over the whole character and conduct.

The beauties of holiness are no mere fancy-sketch, no original picture. They are a copy of the Great Master. The Spirit unscales our eyes, and unveils Christ before us; and we thus see the standard we should aim at, the character to which we are to be conformed—the same mind that is to be in us. The Spirit takes of the things that are Christ's and shows them unto us, and as an artist sets before his pupil some beautiful picture to copy, and instructs his mind and guides his pencil while engaged in the work; so the Holy Spirit sets the perfect beauty of Christ's righteousness and life before us as the object of imitation, that by constantly beholding him with the eye of faith and love, we may be transformed into the same image, from glory to glory.

The work of the Spirit within is aided by God's providential dealings without. It is to the "afflicted, tempest-tossed, and not comforted," that God says, "Behold, I will lay thy stones with fair colours." I have seen a literal fulfilment of these words in nature. It is a remarkable circumstance that the most brilliant colours of plants are to be seen on the highest mountains, in spots that are most exposed to the wildest weather. The brightest lichens and mosses, the loveliest gems of wild-flowers, abound far up on the bleak storm-scalped peak. One of the richest displays of organic colouring I ever beheld was near the

summit of Mont Chenelettaz, a hill about 10,000 feet high, immediately above the great St. Bernard Hospice. The whole face of an extensive rock was covered with a most vivid yellow lichen, which shone in the sunshine like the golden battlement of an enchanted castle. There, in that lofty region, amid the most frowning desolation, exposed to the fiercest tempests of the sky, this lichen exhibited a glory of colour such as it never shows in the sheltered valley. I have two specimens of the same lichen before me while I write these lines, one from the Great St. Bernard, and the other from the wall of a Scottish castle deeply embosomed among sycamore trees; and the difference in point of form and colouring between them is most striking. The specimen nurtured amid the wild storms of the mountain-peak is of a lovely primrose hue, and is smooth in texture and complete in outline; while the specimen nurtured amid the soft airs and the delicate showers of the lowland valley is of a dim rusty hue, and is scurfy in texture and broken in outline. And is it not so with the Christian who is afflicted, tempest-tossed, and not comforted? Till the storms and vicissitudes of God's providence beat upon him again and again, his character appears marred and clouded by selfish and worldly influences. But trials clear away the obscurity, perfect the outlines of his disposition, and give brightness and beauty to his piety:—

> "Amidst my list of blessings infinite
> Stands this the foremost, that my heart has bled;
> For *all* I bless thee, *most* for the *severe*."

But though the trials of life are well fitted to bring

out the fair colours of the Christian character, there is a sense in which the world may be said to be unfavourable to them. Its climate is not like the glowing air and the clear sunny sky of Egypt or Italy, which embalm architectural remains in imperishable beauty, and present the temples erected ages ago as sharply-defined in their sculpture, and as fresh and undimmed in their colouring as if built only yesterday. It is like our own misty climate. The sun shines seldom; the rain-cloud hangs low and dark overhead; the smoke hovers around; and they weather the finest-sculptured surface, and tarnish and begrim the brightest colours. It is difficult to preserve the beauty of holiness in a world lying in wickedness, to keep the garments unspotted from the flesh. The fair colours of grace require to be constantly renewed, polished, brightened. But as Christians, another Will than your own has begun to work in you both to will and to do of His good pleasure. Christ is in you *the hope of glory;* and therefore your holiness has begun, not at its outward circumference, but at its central point—in Christ. And it will surely spread in spite of every opposition over your whole nature and life, transforming you in the renewing of your mind, preserving you from the pollutions of the world, and preparing you for being presented faultless before the presence of His glory with exceeding joy.

These fair colours of grace are within reach of all. In nature there is hardly a stone that is not capable of crystallizing into something purer and brighter than its normal state. Coal, by a slightly different arrangement of its particles, is capable of becoming the

radiant diamond. The slag cast out from the furnace as useless waste, forms into globular masses of radiating crystals. From tar and pitch the loveliest colours are now manufactured. The very mud on the road, trampled under foot as the type of all impurity, can be changed by chemical art into metals and gems of surpassing beauty. And so the most unpromising materials, from the most worthless moral rubbish that men cast out and despise, may be converted by the Divine alchemy into the gold of the sanctuary, and made jewels fit for the mediatorial crown of the Redeemer. Let the case of Mary Magdalene, of John Newton, of John Bunyan, of thousands more, encourage those who are still in the gall of bitterness and in the bond of iniquity. Seek to be subjected to the same purifying process; lay yourselves open to the same spiritual influences; yield yourselves up into the hands of the Spirit to become his finished and exquisite workmanship. Seek diligently a saving and sanctifying union with Christ through faith; and he will perfect that which concerneth you, and lay your stones with fair colours. "Though ye have lien among the pots, ye shall yet be as the wings of a dove, covered with silver, and her feathers with yellow gold."

CHAPTER XIV.

FOUNDATIONS OF SAPPHIRES.

"*And lay thy foundations with sapphires.*"—ISAIAH liv. 11.

BY the sea-shore we find samples of many of the rocks which form the crust of the earth. The glistening beach, ermined by the surf, is composed of smooth rounded stones, whose beauty, when attentively examined, is very remarkable. Wetted by the retiring tide, bright tints and curious streaks appear vividly on their mottled surface. The commonest specimen among them has something to commend it either in colour or in form. We gather pebble after pebble, until we are bewildered amid the rich variety; and the thought strikes us forcibly, if these water-worn fragments be so attractive, what must the rocks themselves be, from which they have been broken off. It is assuredly not of worthless and unsightly materials that the hidden parts of the earth are constructed. Unlike man's work, which is carefully elaborated only where the eye is intended to see it, God's work is the same throughout. Not only is beauty lavished upon the superstructure—upon the grass, and the flowers, and the trees, that are to meet the gaze—but the very foundations are com-

posed of onyx stones and stones to be set, glistering stones and of divers colours, and all manner of precious stones, and marble stones in abundance. How massive, and yet how exquisite are the granite and porphyry beds that underlie the huge masonry of the hills! How richly veined with gold and silver are the pure white quartz rocks which form the buttresses of Alpine peaks, and the floors of extensive valleys! Far down in the dark recesses of the earth, which no human eye has ever beheld, the process of crystallization has been carried on, fashioning dull inert matter into shapes of marvellous loveliness, subliming the black bitumen of coal-fields into sparkling diamonds, and transforming the unsightly clay of the pit into brilliant rubies and sapphires. "The stones of it are the place of sapphires, and it hath dust of gold." From the very beginning, the Creator laid the foundations of the earth in beauty as well as in utility—in ornament as well as in strength. He embraced both in the same harmonious design; and wrought them out, through every geological period, by the same artistic means.

A similar principle appears throughout the spiritual creation, of which the scheme of nature is only the visible picture. In the moral works of God as well as in the natural, beauty is combined with utility—grace with strength. He lays the foundations of the general Christian Church, and of the individual Christian character, with sapphires. Those hidden principles and motives upon which the grand superstructure of faith and charity is built, are not only strong and steadfast, but beautiful. They not

only support the edifice, but contribute to its splendour; are not only the source of confidence, but also the cause of joy and blessedness. The roots of the Christian life, though underground, are as fair as the blossom and the fruit that appear in the sunshine. The same marks of heavenly design may be seen in them both. The tabernacle in the wilderness had no foundation; it was pitched in the bare and sterile desert. Its floor was the shifting yellow sand. No marble pavement or cedar boarding separated the golden furniture and the costly curtains from the naked ground; and barefooted priests in splendid vestments paced over it in the discharge of their sacred offices. But it is not so with the spiritual temple. There is no combination in it of beauty and barrenness, preciousness and worthlessness, imperishableness and changeableness, glory and vanity. It is all fair, all glorious. It is built upon foundations of sapphires; its priests are shod with the preparation of the gospel of peace; and the whole subsequent structure is harmonious, and richly adorned with the graces of the Spirit. The finished work, in its surpassing beauty and splendour, is connected by unity of design with the first stroke that created a scene of order and loveliness out of a chaos of darkness and sin.

The sapphire is one of the brightest and most valuable of those mysterious unfading flowers of the inner earth which we call jewels. Born of darkness, stranger to the light, it yet holds in its core of focussed rays the blue of heaven. Gentians, violets, forget-me-nots, calm lakes and summer skies, glacier-

depths and living springs, have their passing and perishing loveliness enshrined and concentrated in its heart of rock. There is one variety, of a singularly soft pure azure, which has the power of retaining its lovely memory of heaven, even by candlelight, when an ordinary sapphire looks black. It is sometimes found in masses of considerable size, and may therefore appropriately be spoken of in connexion with foundations. It formed the pavement, like the body of heaven in its clearness, under the feet of the God of Israel, as seen by the elders in Exodus; and the throne of glory which appeared to Ezekiel in vision resembled a sapphire stone. It was the fifth precious stone in the breastplate of the Jewish high-priest, and had the name of Simeon engraved upon it; and the second foundation of the New Jerusalem is a sapphire. The minute account in Exodus and Revelation, of this and other jewels that adorned the sacerdotal apparel and the walls of the heavenly city, indicates the symbolic reverence attached to their use by the Jews. And this belief in their mystic qualities passed from India and Persia to Greece and Rome, and after playing a considerable part in the Gnostic systems of Alexandria, became finally transferred to the Christian Church, as we find Bishop Marbœuf of Rennes, in the eleventh century, versifying their talismanic influences in his curious "Lapidarium." Even St. Jerome praises the sapphire for its use in "conciliating to its wearer the favour of princes, quelling his enemies, dispersing sorceries, setting free the captive, and even assuaging the wrath of God himself!"

By its colour alone, the sapphire is distinguished from the ruby and the Oriental topaz, as they are all mere coloured varieties of the mineral substance known as corundum, a pure crystallized alumina, the oxide of the now well-known metal aluminium. Its colour is therefore a very important point, and may be the general reason why it is singled out in the passage in Isaiah in preference to other precious stones. Blue is an exceedingly lovely colour. It is quiet and subdued, attracting without dazzling the eye, suggestive of peace and repose. It is the most universally distributed of all hues. It forms the pleasing background of nature, on which the more brilliant colours of tree and flower and field come forth to arrest our attention, not only by their own beauty, but also by the force of contrast. We see it in the boundless expanse of the sky which bends over and idealizes our dull cold earth, and forms, with its varied changes, a part of the landscape, not the mere empty space that surrounds it. We see it in the distant hills, that assume on the horizon the azure colour of the sky, from sympathy of beauty and peace. We see it in the far-stretching ocean that covers three-fourths of the surface of the globe; in the lake, the river, and the stream, the mirrors which reflect and spiritualize the changeable beauty of earth and heaven. We see it in the blue-bell that rings out the pensive requiem of nature's mutability on quiet autumn eves; and in the human eye, the most wonderful of God's works, which reflects the world without and the world within —which is at once useful as an organ of vision, and beautiful as a spiritual and expressive window of the

soul. And as in the temple of nature, from the viewless air to the ethereal lustre of childhood's innocent eye, the hue of the sapphire predominates, so in the tabernacle and temple of old it was pre-eminent, being always mentioned in connexion with gold in the enumeration of the sacred furniture. "They shall make the ephod of gold, blue, and purple." "Thou shalt make the breastplate of gold, blue, and purple." Taches of gold were inserted into loops of blue, connecting together the curtains of the tabernacle. Laces of blue, passing through rings of gold, fastened the breastplate to the ephod; and a lace of blue bound the golden plate to the mitre of the high-priest. The golden vessels of the sanctuary, with the exception of the ark, were all covered with a cloth of blue; and a veil of blue separated the holy place from the holy of holies. Every Israelite wore a fringe of blue riband to his garments to remind him of the commandments of the Lord, which the Pharisees afterwards enlarged that men might praise their scrupulous adherence to the letter of the law. Jesus Himself carried this blue hem to His garments; and from it the touch of faith, on one memorable occasion, drew out healing virtue. As the gold was emblematic of the glory and majesty of God, so the blue combined with it, in the sacred appointments of the tabernacle, might be aptly employed to represent His love and grace. Such an interpretation would be in strict accordance with the symbolism of nearly all nations, among whom blue has always been associated with ideas of love.

We may therefore understand the sapphire founda-

tions of the Christian life which God lays, to be, in general terms, the *love of God in Christ;* His general love in providence, and His particular and surpassing love in redemption. It is on this beautiful and serene background that all the great manifestations of grace given to mankind are displayed. Heavenly love inlays, as it were, all the moral pictures of earth. It is on this precious sapphire foundation that all the promises and declarations of the Gospel rest. So inseparably is love attributed to God, that the Scriptures affirm it to be His very nature—"God is love." Love is not the mere transient mood or phase of His character; it is, so to speak, His very life. It is not an attribute so much as a manifestation of all His attributes. It is supreme wisdom and supreme love that are ruling and creating everywhere, throughout all the universe, and throughout all eternity. And love and wisdom are but two names for the same thing. "We call love by the name of wisdom when it acts; we call wisdom by the name of love when it thinks and feels." All God's perfections are but modifications of His love; the offers of the Gospel are the invitations of His love; the threatenings of the law are the warnings of His love; the afflictions He sends are the chastisements of His love; the incarnation of Jesus is the richest illustration of His love; and heaven is the seat and consummation of His love.

The temple of Solomon was built on the rocky foundation of Mount Moriah, a place consecrated to the work of redemption, from the time when Abraham offered there the ram which the Lord had provided, instead of his son Isaac, and the destroying angel

sheathed there, by the threshing-floor of Araunah, the sword of judgment, on account of David's sacrifice. And so the spiritual temple is also built upon the work of redemption as its sapphire foundation. A fearful rite used to be performed in the dark ages of pagan superstition. When a temple or other public building was to be erected, its foundations were often sprinkled with human blood in order to consecrate them; and not unfrequently was some poor slave or prisoner of war put to death upon the foundation-stone after it was laid, and his body built into the wall, in order that his spirit might guard the edifice, and terrify away all sacrilegious intruders. And do we not see in this barbarous custom a faint illustration of the self-sacrificing love of Jesus! God laid the foundations of the scheme of grace in His only begotten Son. From the dark and degraded ruins of the fall, He raised a glorious temple upon the death and the body of His own Son. Its sapphire foundations are sprinkled with atoning blood—the precious blood of the Lamb slain as an offering for sin from the foundation of the world. It is consecrated and hallowed for ever by a self-sacrificing love such as the world has never seen. Christ himself is the chief corner-stone, which binds together and supports the whole structure. And it is because the spiritual temple is built as it were upon His body, because its foundations are laid in His empty grave, that it is so glorious and enduring, and the gates of hell shall not prevail against it.

What beautiful emblems of Christ's love are the two grandest objects of nature—sapphire sea and

sapphire sky! The boundless extent of heaven's blue field cannot be measured even by the astronomer, so the length and breadth, and height and depth of the love of Christ surpass all knowledge. We know something of what is nearest us of the sky, the human side of it, as it were. That part which lies immediately above our earth is familiar to us, from the offices of beauty and usefulness which it serves; the firmament in this respect shows forth the handiwork of God in ministering continually to our wants. But the profound abysses of blue beyond, the eternal, unchangeable heavens that declare God's glory and that seemingly have no relation to man, are utterly incomprehensible to us; the very stars themselves only give us light to show the infinity of space in which they are scattered. So the love of Christ in its human aspect, as displayed in the work and blessings of redemption, and in offices of care and kindness to us, is so far comprehensible, for otherwise we could not build our trust upon it, and St. Paul would not speak of *knowing* it; but its infinite fulness, its divine perfection, its relation to the universe, is utterly beyond our knowledge, and eternity itself, though spent in acquiring larger and brighter views of it, will fail to exhaust the wondrous theme. The boundless blue sky of Christ's love bends over us, comprehends our little life within it, as the horizon embraces the landscape; wherever we move, we are within that blue circular tent, but can never touch its edges; it folds about with equal serenity and adaptability the lofty mountain and the lowly vale, the foaming torrent and the placid lake; the bold, rugged, aspiring

nature, and the quiet retiring disposition, the man of action and the man of thought, the impetuous Peter and the loving John; it softens the sharp extremes of things, and connects the highest and lowest by its subtle, invisible bond, and yet stretches far aloft beyond the reach of sight or sense into the fathomless abyss of infinity. Or, to take the sea as the comparison, the sea touches the shore along one narrow line, and all the beauty and fertility of that shore are owing to its life-giving dews and rains; but it stretches away from the shore, beyond the horizon, into regions which man's eye has never seen, and the further it recedes, the deeper and the bluer its waters become. And so the love of Christ touches us along the whole line of our life, imparts all the beauty and fruitfulness to that life, but it stretches away from the point of contact into the unsearchable riches of Christ, the measureless fulness of the Godhead,—that ocean of inconceivable, incommunicable love which no plummet can sound, or eye of angel or saint ever scan; and the love that we cannot comprehend, that is beyond our reach, is as much love as that whose blessed influences and effects we feel.

The lake of Geneva is one of the loveliest sapphires which Nature wears on her bosom. I have gazed unweariedly for hours at a time, upon the wonderful blue of its deep transparent waters, permanent in all circumstances, unaffected by any atmospheric changes. In its glorious mirror I have seen reflected a strange harmonious combination of the grandest and humblest objects. The cloud-marbled sky makes a brighter sky in its azure depths; the long line of the snowy

Alps, with the sovran crown of Mont Blanc, assumes a purer and more spiritual grandeur in its tranquil bays. And mingling with these sublime objects are the humbler scenes of the shore, the white shadows of the graceful lateen sails, the drooping green tresses of the Babylonian willow, the picturesque vine-clad slopes, and painted chalets half hid amid bowers of magnolia, walnut, and chestnut trees. It is a gorgeous mosaic of lapis-lazuli, unsurpassed anywhere on earth. No painter of fairy landscapes ever brought the details of nature into such a magnificent focus. But lovely as I felt it to be in itself, it seemed lovelier still as a type of that wonderful love of Jesus, which is unchangeable amid all circumstances, which reflects and harmonizes in its depths of divine tenderness the grandest and the humblest of human interests, and makes by its sublime "reconciling to itself of all things" a heavenly paradise even of earth's sinful ruins.

These emblems are true even in their changes. Dark clouds at times veil the sky; storms ruffle the face of the deep; and their charm of blue serenity is lost. But cloud and storm only intimate the passing commotion needful to purify the air and the water; and compared with the azure depths above and below, they are superficial and transitory. They retire, and the beautiful blue of heaven reappears, and the ocean again becomes a sapphire foundation, on which the sun scatters his jewels of light with regal lavishness. And so no dark trial, no grievous judgment, can cross our sky without revealing some spot of heavenly blue in the midst of it; or, if con-

cealed for a moment, breaking forth again with greater brightness and beauty. No mysterious dispensation can ruffle the surface of our peace, and raise up agitating doubts and fears, without leaving behind a purer joy, a calmer and deeper satisfaction, that best and truest peace which is born of conflict and trouble. Behind every storm of trial and every cloud of sorrow, is the heavenly blue of Christ's unchangeable love—a love stronger than death, a love that follows us amid all our wanderings and backslidings, amid all our changes of heart and circumstance, and remains steadfast and unwavering even when our love is suspicious and cold. "I have loved thee with an everlasting love, therefore with loving-kindness have I drawn thee;" and every mutation of earth passes away from before that love, as the cloud from the sky, and the wave from the ocean. As the Psalmist sublimely says, He maketh the blue waters of the sea the floor of His chambers, and the blue star-spangled sky the pavement of His dwelling-place; and He hath laid the sapphire foundations of our life and hope, of all that is our earth, and all that is our heaven, in His own love—unfathomable as the one, and boundless as the other.

The Hebrew word *sappir*, translated sapphire in our version, is derived from the same root as the words that signify a book, writing, or engraving; and according to the Talmud, the two tables of stone, on which the Law was written on Sinai, were formed of sapphires. Blessed be God, it is not on the sapphire foundations of the Law that we are now to build our trust. The obedience that can rest on these founda-

tions must be perfect in every jot and tittle, and perpetual, without cessation or suspense, without question or doubt, from the beginning to the end of life. But such an obedience we cannot rear; our best obedience is stained at once in the motive and in the action; it is faltering, unequal, irregular. We cannot, therefore, be saved by the Law. It can only display to us the essential holiness of God, and our own innumerable and immeasurable shortcomings; it can only show us our need of another mode of acceptance, of some remedial measure. It is a schoolmaster that leads us to Christ. His finished work is now our sapphire foundation. His obedience, perfect and perpetual, is now the ground of our justification and acceptance. The salvation of the world reposes exclusively upon the love of Christ as displayed in the work of redemption. That alone is the basis upon which God builds the new heaven and the new earth wherein dwelleth righteousness. It is all perfect, all beautiful, a foundation of sapphires. Nothing can be added to it, nothing taken away from it, without marring its exquisite symmetry and adaptation. By one offering Christ hath perfected for ever them that are sanctified. That one sacrifice stands alone; it can never be repeated or improved. All is perfect and prepared to make us perfect. We have only to believe and live; we have only to build and inhabit; for no other foundation can any man lay save that is laid, which is Jesus Christ. "Behold, I lay in Zion for a foundation, a stone, a tried stone, a precious corner-stone, a sure foundation."

"I will lay thy foundations with sapphires." The structure of our faith is four-square, like that of the temple of old. The chief corner-stone which binds the whole together is the redemption-love of Christ; but connected with it as a foundation for the believer's stability and hope, is the *covenant of grace*, embracing every blessing from the first moment of incipient peace in the soul to the consummation of that peace in heaven, extending in its administration to the most minute particulars, making ample provision for every evil that can possibly happen to us, and securing calmness in the prospect and in the hour of death. This gracious covenant is the support and comfort of the believer throughout his whole life. The mountains may depart and the hills be removed, but it will remain steadfast and unalterable; and in the end he, too, can chant the triumphant swan-song of the dying singer of Israel—"He hath made with me an everlasting covenant, ordered in all things and sure; this is all my salvation and all my desire." The *revealed truth of God* is another sapphire foundation connected with the precious corner-stone. Wonderfully is the Bible adapted to all the varying circumstances and necessities of the believer's life. There is a fulness in it which meets every want, and yet can never be exhausted; an interest ever fresh, ever new. We can never outgrow its help, or reach a stage of spiritual advancement when it can no longer lead us. It ever goes before, drawing out and educating every spiritual perception, satisfying every spiritual need, and yet ever giving us a sense of infinite fulness beyond. *The experience of the believer*

is yet another sapphire foundation. The faith of one who believes to the saving of his soul rests not on the shifting ground of reports and opinions; not merely on an outward manifestation and testimony of the truth; but on the firm rock of personal and spiritual experience; on the rock of Christ's presence in the soul, "which temptations have laid bare for Him to build on." The objective revelation of the Gospel has been followed by the subjective operation of the Spirit. The outward teaching of inspiration has become an inward divine illumination. The doctrine has become a living power whose strength has been tried and proved; the divine announcement has passed into the form of a human experience; the creed is no mere formula of speech, no mystic incantation, but "corresponds with needs of his soul, which he has probed to the bottom in the hour of difficulty." In short, Christ proclaimed by Old Testament types and prophecies, revealed in the Gospels, preached in the Apostolic Acts and Epistles, has become Christ formed in the soul the hope of glory. And thus as face answers to face in a glass, do the believer's spiritual perception and experience of divine truth agree with its divine manifestation in the Word. And it is this correspondence realized that renders Christianity no longer an abstract theory, but a living life-giving reality, into which the soul has entered, and against which no argument can possibly prevail. Such are the four sapphire foundations of the Christian faith and life; the foundations of the apostles and prophets, Jesus Christ being the chief corner-stone.

The sapphire is one of the most precious jewels;

ranking next to the diamond in value. It is precious for its own beauty and rarity, and precious on account of the labour involved in obtaining it. And who can estimate the preciousness of the sapphire foundations of our faith, the work of redemption which cost the humiliation, suffering, and death of the Son of God to accomplish; and the experience of the truth in the soul wrought out through much sorrow, through doubts, and fears, and terrible struggles? There is no carat standard capable of fixing their value. Utterly inadequate were all the riches of the universe to pay the ransom-price of one soul. "Ye are bought not with corruptible things, such as silver and gold, but with the precious blood of Christ."

The sapphire is also one of the purest of the precious stones. The ancient meteoric stone called the Kaaba, built into the sacred mosque at Mecca, and still pressed with devotion by the lips of every pilgrim, may be taken to represent in its blackness and earthliness, the Mohammedan religion. But the foundation of Christianity is a pure transparent sapphire. It has no flaws, no dross, no earthy ingredients. The truths of the Gospel are all pure and unsullied. There is nothing in them of that admixture of error which is to be found, more or less, in all human systems of religion. They are crystallized into the most perfect form. They are simple as the azure sky, transparent as the blue water—like the light of day, clear themselves, and making everything else clear; revealing to us the mysteries of the world and life, and taking us down to the very heart of things. They are easily understood; they appeal at once to the reason and

the judgment; they make the simple wise; they are adapted to the meanest understanding. Indeed, the simpler the mind, the more child-like the heart, the easier of comprehension they are. It is this wonderful simplicity and clearness which constitute their unspeakable value to the poor and ignorant, who have in most cases neither the power nor the leisure to search out abstract philosophical truth; to the afflicted, tempest-tossed, and not comforted, whose mental faculties have been weakened and relaxed by suffering, and who are therefore indisposed to and incapable of mental effort. Precious at all times, these simple, transparent Gospel truths are doubly precious in the season of trouble. Nay, the darker the trial, the clearer does their sapphire-light shine out. We can see as well as feel them beneath us. The soul can repose unhesitatingly and without toil upon them, even amid the decay of every mental power; and there are instances innumerable of great theologians and men of science and philosophy brought back from all their abstruse researches, for comfort and hope in life's last hours, to the simple old Gospel truths they had learned at a mother's knee.

These foundations are steadfast and enduring. They are not composed of perishable materials—not even of rocks that weather and crumble away—but of sapphires, next to the diamond the hardest of the precious stones. Jewels, as a class, are the most lasting of all earthly objects—the most beautiful as well as the most imperishable form in which matter appears. Gold will wear away; silver will tarnish;

wood will decay; the granite stone itself will disintegrate; but jewels will continue unchanged for thousands of years. They are therefore expressive types of stability and permanence. The sapphire foundations of the Christian life are everlasting. They are no vague hopes or shadowy dreams, like the cloud-architecture of crimson and gold that rests on some mountain-peak, but solid substantial realities, more enduring than the everlasting hills themselves. They are no mere illusions, like the pictured reflection of the sky mirrored on the tranquil bosom of a lake, which may be destroyed in an instant by the merest trifle—a pebble thrown into the midst of the celestial scene by an idle hand, the wind of a passing breeze, or a withered leaf falling down from an overarching tree—but truths which will last when these heavens themselves shall be rolled up like a scroll and vanish away. Delusions only aggravate the wretched reality. The blue mirage makes the sandy desert more insupportable. What is not true and lasting, however beautiful, cannot comfort or uphold us. Our foundations may be lovely as sapphires, but, unless they are hard and enduring as sapphires, they will not suffice us. And were Gospel truths destitute of the seal of certainty, they might retain their literary brilliancy, but they would lose their consoling and saving power. But such fears are utterly groundless. Not only grace but truth came by Jesus Christ. The hope of the Gospel is a hope that maketh not ashamed. Its gold is gold tried in the furnace. The foundation laid in Sion is a "tried stone"—tried of old by the Apollinarian, Eutychian, Arian, and Nestorian con-

troversies—tried by the vast advances recently made in the acquisition of secular knowledge, by the tests of sciences of which our forefathers knew not even the names, by the hammer of the geologist, the crucible of the chemist, and the discoveries of the physiologist. The deep waters of modern thought and rational speculation have surged around it; the bolts of textual and historical criticism have descended upon it; but it has proved itself to be the absolute truth after all. As Dorner says, "At no time has a problem been proposed to Christianity which she has not, though amid the conflict of the sharpest antagonisms, been able to solve." The experience of myriads in both worlds has tried it, and their testimony confirms the words of the Apostle: "I know whom I have believed, and am persuaded that He will keep that which I have committed to Him against that day." Amid the great mysteries of life which lie around us unexplored, in hopeless confusion, baffling all our feeble attempts at explanation, we feel the everlasting Arms underneath us. Amid the vain show in which we walk, with nothing before and nothing behind us, the steps of faith fall on the seeming void, and find the Rock of Ages beneath. Amid the perpetual mutations of earth, we can rest in peace on the everlasting foundations against which the waves of time and change shall beat in vain. The paths of philosophy may seem to "interlace each other, leading back to our own footsteps in the sand;" but in the Gospel we walk on sure ground trodden and hallowed by our blessed Redeemer himself, and beaten hard by the march of earth's wisest and best.

Oh! these sapphire foundations which God has laid, are the only realities, the only sure and abiding things. All else is passing and perishing. All earth's circumstances and interests are but the temporary scaffolding, destined to be removed when the structure is completed. We raise a home to ourselves, and fill it with comfort, beauty, and love; but we are like the bird that builds its warm and tender nest upon a rotten bough. We stand upon our worldly possessions, joys, and hopes, and we imagine ourselves safe and secure; but we are like a man standing on the heap of loose mould thrown up on the yawning brink of a grave. The heap crumbles away, and yields beneath our feet, and we are suddenly precipitated into the dark abyss. We build temples of happiness; but they are like the castles of sand which children, dear Babel-builders, rear on the glistening shore. Earnestly and toilsomely they are erected, but the oozing water filters in, and wall and tower and counterscarp shake and disappear in the advancing tide. Time's bitter wave washes away all the labours of man. And even the external and subordinate things of religion—such as forms of church government, ordinances, creeds, and those intellectual labours which are employed in their establishment and defence, though so intimately associated in our minds with the eternal world to which they refer, that we are accustomed to think of them as sharing in its immortality—are all destined to pass away. "Whether there be prophecies, they shall fail; whether there be tongues, they shall cease; whether there be knowledge, it shall vanish away." Only the

foundations of sapphires and the holy living structure built upon them shall continue forever. There is no force strong enough in the universe to move these foundations, and the structure reared upon them. The waters that would sweep them away must first overwhelm the cross of Christ and the throne of heaven.

Such are the foundations of sapphires which God lays. Man's life is a ruin despoiled and defaced by sin. We cannot build upon the old foundation and with the old materials, for the structure to be erected is a "Palace Beautiful," an habitation of God through the Spirit. The rubbish must be cleared away; the dark, opaque, worthless stones of our own good works encumbering the ground must be removed; and the Stone which the builders rejected—disallowed, indeed, of men, but chosen of God and precious, the sapphire-stone of Christ's finished work—must become the head-stone of the corner. And the foundation being thus laid, we must remember that we have not materials for the construction of a palace of our own and for a spiritual building. We cannot, like Solomon, build the temple of the Lord and the house of the forest of Lebanon. If we build the earthly house, it will be at the expense of the heavenly; and if we build the heavenly, we must sacrifice the earthly. Let us not build on this foundation, therefore, wood, hay, stubble, lest our work be burnt and we suffer loss, and we ourselves "be saved as by fire." But let us build a glorious structure of gold, silver, precious stones—faith, hope, and charity—the three things that abide. Let us learn, too, in

our spiritual architecture, a lesson from the pearly nautilus. As it grows older, it forms a series of new and larger chambers in its spiral shell, until at last it lives only in the uppermost and largest compartment. So let us go on to perfection, not laying again the foundation of repentance from dead works and of faith toward God, but building, in the advancing work of sanctification, nobler and heavenlier mansions for our spirits, until at last the narrow earthly house of this tabernacle is exchanged for the city which hath foundations, garnished with all manner of precious stones, whose builder and maker is God.

CHAPTER XV.

"NO MORE SEA."

"*And there was no more sea.*"—REVELATION xxi. 1.

THE most beautiful features of the sea-shore are those little pools that are left behind among the rocks by the retiring tide. They are full of clear pellucid water two or three feet in depth, which lies over the white pebbles at the bottom, and the green and crimson sea-weeds fringing the sides, like a sheet of pure glass over a picture. If you look into one of these fairy pools from a particular point of view and choose the proper light, you can gaze far down into the deep blue sky, and see the snowy and amber clouds overhead, and the overarching trees, like long-fringed eyelashes over a laughing eye, vividly mirrored in its depths; by the reflected glory the little basin over which a child can step is made deep and capacious as heaven itself, and filled with the brightest shapes of aerial beauty. Whereas if you stand close to its side, and look at it from another point of view, you see neither sapphire sky, nor golden cloud, nor shadowy tree; nothing but the dull stones, and the motionless tufts of dark sea-weed at the bottom.

This picture of nature illustrates the twofold aspect of divine truth. It has a natural and a spiritual side. If you examine it by the eye of faith and from the stand-point of heart-experience—it lies before you like a bright transparent pool in which you see the things above—the great and solemn realities of the eternal world clearly reflected; you see wonderful things in God's law. But if you look at it by the mere carnal eye, and from the stand-point of the intellect, which is ever learning, but never able to come to the knowledge of the truth, it suggests no spiritual thoughts and reveals no spiritual images, but seems of the earth earthy. These remarks apply with peculiar appropriateness to that strange expression from the Apocalypse, which I have chosen as a subject for meditation during this season of outward storm and inward retrospection,—"And there was no more sea." I feel, in selecting this text, like one trying to fill a cup from the ocean. It seems an easy thing to do. There is abundance of water. Billow after billow comes tumbling to the shore; but while the white foam wets the feet, and the dashing spray drenches the form, very little water enters into, or remains in the cup. And so, like a mysterious, storm-vexed ocean, that wonderful Book of Revelation, alternately barred with the shadows of earth and the sunbeams of heaven, rolls its waves to my feet; but it is difficult from the huge mass of water, so indissolubly bound together, each prediction blending and harmonizing with all the predictions that have preceded, and all that are to follow after, to take up a compact and manageable portion. In the drop, however, that remains in my cup, small

though it be, the celestial scenery glasses itself as clearly, if not as widely, as in the great ocean of prophetic truth itself, which holds in its blue horizon-arms all the beauty of heaven as its own.

We know not whether there will be a literal physical sea or not in the future world. To the apostle John, who doubtless, in common with all his countrymen, looked upon the sea with dread, the absence of it in the heavenly vision may have been welcomed as a relief. All the allusions to the sea in the Bible, all the images derived from it, seem to be tinctured with this national prejudice—for they refer solely to its power or danger—never to its æsthetic aspects; and many, especially those to whom the sea has proved cruel, may sympathise with this prejudice, and rejoice to accept the announcement in all its literality, that in heaven there shall be no more sea. To others again whose earliest and sweetest associations are connected with its shelly shores and its gleaming waters, who reside within constant hearing of the two grandest voices of nature calling to each other, one of the mountain and one of the ocean, a world without a sea would seem a world without life or animation, without beauty or attraction, a blank, silent realm of desolation and death. If this soft pearl should fall out of the terrestrial ring, it would leave a dreary void behind, and lose all its value in their eyes. At all events this much seems clear, that if the future world is to be a physical world, somewhat like this, only purer and more glorious, and if there is to be no more sea in it, then a new and to us

altogether unknown and unimaginable series of compensations must be introduced, for in this world the sea is all-essential. It is the vital fluid that animates our earth, as the blood animates the body; and should it disappear altogether, our fair green planet would become, like the moon, a heap of brown volcanic rocks and deserts, lifeless and worthless as the slag cast out from a furnace. Into this far-reaching question, however, I do not seek to enter. In all the matters connected with the scenery of the future world, we are left in uncertainty, free to indulge all kinds of plausible conjectures and speculations. Scripture maintains a guarded and dignified reserve on the subject; it leaves such secrets in the stern keeping of death, and repels all the approaches alike of natural and prurient curiosity, by that most grand and cheering declaration, whose openness, breadth, and universal adaptation are surely infinitely preferable to any details and descriptions of a particular mode of life, however gorgeous and fascinating, "Eye hath not seen, nor ear heard, neither have entered into the heart of man, to conceive what things God hath prepared for them that love Him." It will be observed that most of the descriptions of heaven in the Bible speak of it more as a state than a locality, more as a condition than a place; and this for an obvious reason. Man's happiness is derived not so much from external circumstances as from inward feelings. When our first parents sinned, and lost in consequence their peace of mind and purity of heart, Eden was to them no longer the beautiful Elysium that it seemed before; and we read that Paul and Silas sang at

midnight in the dreary prison, with their feet fast in the stocks, uncertain of their fate, because of the irrepressible spiritual joy that welled up in their hearts like a fountain of fresh water in the midst of the salt sea. To be with Jesus, and to be like Him, will be heaven itself to the believer; and in comparison with this fulness of joy, all circumstances of scenery and association sink into insignificance. And anchored by this blessed hope that maketh not ashamed, we can wait patiently amid the rising and falling of speculation's troubled waves, for the full disclosures of eternity, assured that what we know not now we shall know hereafter.

Instead, then, of regarding the expression, "and there was no more sea," as an Apocalyptic hieroglyph to be slowly deciphered by the aid of physical facts, I shall treat it as a comprehensive, celestial symbol, by which spiritual things are shadowed forth. And viewing it in this figurative sense, the sea seems to me to involve *three* ideas—*separation*, *change*, *storm*, which our circumstances at this time are well fitted to impress upon our minds. In seasons like this, we naturally think of those who are absent from our side, of the changes that have taken place, and of the storms that rage without. These are the ideas which I now wish to illustrate in connexion with my subject, "And there was no more sea."

I. The existence of the sea implies *separation*. The sea, along with its accompanying lakes and rivers, is in this world the great divider. It is the boundary of kingdoms and continents, more impassible than moun-

tain ranges, however lofty and extensive. In the peculiar arrangements of land and water on the surface of the earth, we have a clear and unmistakeable evidence of God's intention from the very beginning of separating mankind into distinct nationalities; an intention remarkably fulfilled in the confusion of language at Babel, and the consequent dispersion of the human race. For this separation a twofold necessity suggests itself. It exercised a restraining and a constraining influence. Had mankind been permitted to remain for an indefinite period in one narrow region of the earth, brought into close and constant communication with each other, and speaking the same language, the consequences would have been most disastrous. They would have inevitably corrupted one another. Family and individual interests would have come into frequent and violent collision. Their proximity would have been the occasion of endless wars and deeds of violence and bloodshed. We have a dark picture, painted for us by the inspired writer, of the condition of mankind before the flood, when they were crowded together within a comparatively limited area. "God saw that the wickedness of man was great upon the earth, and that every imagination of the thoughts of his heart was only evil continually." Stimulated by mutual encouragement and example, such a densely social life could not fail to overcome the moral barriers raised against it, and the reformatory discipline under which it was placed, and break out and riot in fearful excesses. God, therefore, mercifully interfered; and by introducing a wise element of confusion into the new social develop-

ment after the flood, which was being constructed on the old basis and according to the old plan, he separated mankind into distinct nations, placed them in different scenes and circumstances, and effectually kept them apart by means of seas and trackless oceans; and thus the maddening passions of man were rendered comparatively innocuous, or circumscribed within the narrowest possible limits.

Another reason for this separation of the human race by means of the sea was that national character might thus be formed and educated—that the one type of human nature might develop itself into every possible modification by the force of different circumstances and experiences. I have somewhere read that "as the individuality of each man is that peculiar influence with which he is entrusted for the good of society, so the individuality of nations is that peculiar influence with which they are entrusted for the benefit of the world." If men had no individuality they could not obviously influence one another; where every member of the species was exactly the same the monotony would be intolerable; we should lose the sense of contrast, and with it very soon the feeling of personality. And so also if there were no individuality among nations, mankind could make no progress; all human societies would lose the mental activity, the noble competition, the generous emulation which distinguish them; there would be no mutual instruction, nothing to keep in check local evils, and by the better agencies of one region stimulate into action similar agencies in another. By the sea, then, has mankind been separated into different nations, and

placed amid varied scenes of nature and circumstances of life for these wise and gracious purposes. And it is a remarkable circumstance that this barrier continued insurmountable while the infant races were receiving the education, and undergoing the discipline, that were to qualify them for enlarged intercourse with each other. So long as they continued idolaters, debased and depraved, struggling for subsistence and warring with one another, no benefit could accrue to mankind from allowing them to meet and mingle; on the contrary, the good of the world required that they should be safely imprisoned, each within its own domain, and that they should have little or no general intercourse. When, however, the day appointed by God to enlighten and emancipate the world approached, the sea became all at once, through the improvement of navigation and ship-building, the great highway of nations, the great channel of communication between the different and distant parts of the world. The argosy of Christianity, freighted with a more precious treasure than the golden fleece of Colchis—with nobler heroes on board than the Argonauts—with songs sweeter than those of Orpheus—cut loose from its anchorage on the coasts of Palestine by the Roman sword, and favoured by propitious gales, visited and enriched every region of the earth. As the true civilizer, its great design is to bring all mankind into contact, and to make them interchange, in a state of exalted unity, all the varied excellences which have been developed in a state of separation. And this design is being accomplished more and more every day. Nations, by means of commerce and missionary

enterprise, are holding communion with nations, and mutually enriching each other by the stores of knowledge, experience, and religious education which they have each accumulated apart. Christianity is rapidly melting the separate nationalities into one; but the fusion of these discordant elements into one glorious harmony, pure as sunlight, inspiring as a strain of perfect music, will never be accomplished in this world.

Much may and will be done to neutralise the effects of the original confusion of language and dispersion of mankind; but the work requires a higher platform than the present earth to complete and perfect it. So long as the sea shall continue to bound kingdoms and continents, and roll its waves between nations, so long will there be numerous and great hindrances to intimate and frequent fellowship between all the parts of the world-wide Christendom, which no Atlantic telegraph or merchant fleet, no art or progress of man can effectually remove. There will be tribes, and tongues, and nations, and peoples. It is in heaven alone that these distinctions will be abolished, and the confusion of tongues repealed. There, where no separating sea exists, they shall all be gathered together with one accord in one place. They shall come from the north and the south, and from the east and the west; "From Greenland's icy mountains and India's coral strand;" and shall sit down in the kingdom of heaven. They shall be around the throne a multitude which no man can number, with peace on their brows and love in their hearts; singing in the same sublime language the same new song of Moses and the Lamb, "Thou hast redeemed us to God by thy blood out of every

kindred, and tongue, and people, and nation." There will be neither Scythian, Roman, Greek, nor Jew—neither bond nor free; none of the nationalities which human sin first originated, and the great sea perpetuated and confirmed; but they all shall be one in Christ—one, as God and Christ are one!

"And there was no more sea." Methinks these words must have had a deep and peculiar significance to the mind of the old fisherman, whose early life was spent on the blue waves of Galilee, when we think of the circumstances in which he was placed when he wrote them. He was a prisoner in Patmos, a small desolate island in the Ægean. A stormy and dangerous sea, seldom traversed by ships, separated him from all the objects of his affections—from his friends and kinsfolk according to the flesh, and from his brethren in Christ. He lived for years in this island, the lonely, weary, heart-sick life of an exile. A touching tradition pictures the aged apostle going day after day to an elevated spot on the ocean-rock, to which, Prometheus-like, he was chained, and casting a longing look over the wide waste of waters—with his face, like that of the captive Daniel in Babylon, stedfastly fixed towards Jerusalem; as if by thus gazing with all his soul in his eyes on the open sea he could bring nearer to his heart, if not to his sight, the beloved land and the cherished friends for whom he pined. For weeks and months nothing diversified the lonely surface of the ocean, save the white form of some chance sea-bird, whose wings he wished to borrow that he might flee away and be at rest. The sea-breeze breathed of freedom as it sighed past him; the waves that broke

in white foam at his feet murmured of happier shores. He felt himself like a wrecked and stranded ship cast useless on the "wharf of Lethe," while other vessels were nobly breasting the billows, and bearing far and wide the glad tidings of salvation. The cause of his beloved Master needed the aid of every faithful arm and heart, but he could do nothing. Oh! a feeling of despondency must have often seized him when he thought of all from which the cruel sea divided him. And when the panorama of celestial scenery was spread out before his prophetic eye, to compensate him for the trials of banishment—visions of heaven, like but more glorious far than the aerial landscapes of sunset on the Ægean—with what joy, methinks, must he have seen that from horizon to horizon there was no sea there—nothing to separate—nothing to prevent the union and communion of those whom the grace of Christ had made free, and his power had transferred to that "large place."

"And there was no more sea." Do not these words come home to our own hearts with peculiar depth and tenderness of meaning? For what family is there so favoured that all its beloved ones are safely folded under one roof-tree? what home is there whose circle of happy faces is complete, from which no wanderer has gone forth to the ends of the earth? Alas for that strange migratory instinct which robs the human nest of its bravest when scarcely fledged! Alas for the river of human life so often overflowing its banks, and compelled to search for fresh fields and pastures new! The homes and the graves of those who once "prayed around the same fond mother's knee" are

now severed far and wide by ocean's stormy waves. At this moment there are hearts on the lonely deep that have well-nigh broken in the desperate wrench of parting from their native land; there are eyes that gaze through bitter burning tears on the purple hills of childhood, as they grow dim and cloudlike on the lessening horizon. We think of our friends in distant countries almost as if they lived in another world, and had no longer any part or lot in the common everyday world in which we dwell. We hear from them and of them at long intervals, but we scarcely expect ever to see them again; and however anxious they may be to revisit the scenes of their childhood, though they may have many a pang of home-sickness, and cast many a yearning look across the blue waters, still circumstances prevent their return; new ties, new interests, new associations spring up to chain them to their adopted land, and to separate them from us for ever. And how often in the solemn eventide, when memories of the past come back with thrilling power —how often in gay and festive anniversaries like these, when most we miss our absent and distant friends, and imagination strives in vain to picture the strange scenes amid which their lot is cast, and a longing, all the stronger that it cannot be gratified, to see the old familiar faces, and to hear the dear voices we remember so well, takes complete possession of us —oh! in such hours as these, how do we yearn with our whole souls for the place where there shall be no more sea to divide the loving and the loved, and to make life one long dreary exile. Heaven is the land of eternal reunion. Thrice blessed thought! The

friends who bade reluctant farewell to each other on earth, and dwelt apart with wide seas rolling between, shall meet on the eternal shore to separate no more for ever. Those whom we shall never see again in this world of partings and tears shall be restored to our bosom in that land where the home-circle shall never be broken, and the inhabitants shall go no more out; and where "the glorious Lord will be unto us a place of broad rivers and streams, wherein shall go no galley with oars, neither shall gallant ship pass thereby." And next to the bliss of enjoying our Saviour's glory eye to eye and face to face, with no sin coming between, this reunion of friends will be the greatest happiness of the sealess heaven.

II. "And there was no more sea." These words have still another significance. They imply that in heaven there shall be no more *change*. The sea is the great emblem of change. There is nothing in the world more uncertain and unstable. It is one element, but it is never monotonous. It is a unity, but it is composed of a multiplicity of parts, and is suggestive of ever-varying reflexions. You never weary of gazing upon it, for it is never for two successive hours the same. It is the facile slave of every fickle wind, and every shifting cloud, and every sportive sunbeam. It is the scene alternately of the softest dalliance, and the fiercest rage of the elements. Now it lies calm and motionless as an inland lake—without a ripple on its bosom—blue as the sapphire sky above—golden with the reflexion of sunset clouds—silvery with the pale mystical light of moon and stars; and

now it tosses its wild billows mountains high, and riots in the fury of the storm. One day it steals softly up the shore, kissing the shells and pebbles with a gentle sigh as though they were gifts of love; the next it dashes its white crested waves, laden with wrecks and corpses, against the iron rocks. Treacherous and deceitful it lures the mariner on by its beauty, until completely in its power; and then it rises up suddenly in fury, and with an overflowing flood carries him away.

And not only is it the emblem of change: it is itself the cause, directly or indirectly, of nearly all the physical changes that take place in the world. Ascend the mountain summit, and there, amid the crags where the eagle builds her eyrie, and the heather grows in the blue immeasurable silence of heaven, you tread the shores of a former sea, whose shells and corals embedded in the rocks are still as perfect and beautiful as when the last retiring wave rippled over them. Descend into the stony chambers of the earth, and there in the darkness of the quarry you will see the petrified skeletons of fish that once swam in the waters, and the sands that formed the shores of unknown seas, and the undulating ripple-marks left behind by the ebb and flow of long-forgotten tides. We cannot name a single spot where the sea has not some time or other been. Every rock that now constitutes the firm foundation of the earth was once dissolved in its waters, lay as mud at its bottom, or as sand and gravel along its shore. The materials of our houses were once deposited in its depths, and are built on the floor of an ancient ocean. What are now

dry continents were once ocean-beds; and what are now sea-beds will be future continents. Everywhere the sea is still at work—encroaching upon the shore—undermining the boldest cliffs by its own direct agency. And where it cannot reach itself, it sends its emissaries to the heart of deserts, and the summits of mountain ranges, and the innermost recesses of continents—there to produce constant dilapidation and change. Its own waters are confined by the shore-line: but no voice hath ever said to its fleet-footed winds and its viewless vapours, "Hitherto shall ye come, and no further." They rise from their ocean-bed, these messengers of the sea, and pursue their flight along the sky until some lofty peak far in the interior arrests them; and they discharge their watery burden into its bosom, forming the sources of streams and glaciers, that carry on the work of change where the roar of the sea itself is never heard. Where do the clouds that cling to the mountain tops, and sail in majestic processions of gloom, or in dissolving glories of light along the sky, come from? Is it not the sea? Where also the rivers and streams, that make our homes musical with their murmurs, that animate our scenery with their sparkle and motion, and attract all that is fairest and loveliest of earth's productions along their banks? Is it not the sea? The dewdrop that glistens in the eye of the daisy; the green sap that fills the delicate veins of the lily; the soft spring rain that fertilizes the earth, nourishing the seed in the furrow, and the blossom on the tree; the snow that covers with its stainless shroud the dead things of nature,—all, all come from the sea, the great source.

in combination with the sun, of every force and movement that the world displays. And what mighty changes are all these complicated agencies, driven by one motive power, constantly producing? They are altering the features of our planet: wearing down mountains in one place, filling up lakes and seas in another, forming new lands here, and removing old lands there. Well, then, may we speak of the sea as the emblem and the cause of change. And viewed in this light there is a striking appropriateness in there being no more sea in the eternal world. Heaven is the land of stability and permanence. Scripture invariably depicts it as such in striking and delightful contrast with this changing sphere, upon all whose persons and things is written the dreary doom, "passing away." This world was prepared expressly to be not only man's habitation, but also his place of probation—his school of discipline; and, therefore, all its changes are necessary to educate the immortal spirit for the glorious destiny that awaits it. But once that education has been completed, and man transferred to his final home, there will be no further necessity for the constant shifting of scenes, and changing of persons, and altering of circumstances, amid which he spends his life on earth. The conditions, the circumstances of existence in heaven will be for ever fixed and unalterable. There will be progress, but not change; growth, but not decay. The saints in bliss will pass from glory to glory as here they passed from grace to grace; but they will bewail no more the transitory character of their joys, and the passing away of their possessions, and the changing

moods of their friends, and the alteration of the scenes around them. Their kingdom will never be moved; their crown of glory will never fade away; their treasure no moth will corrupt, nor thieves break through and steal; their friends will be united to them by ties which nothing can break or disturb; their pleasures will be pleasures for evermore. There will be no ebb and flow—no waxing and waning—no rising and setting—no increasing and diminishing in the life of heaven. There will be perfect fulness of rest in the changeless land where there is no more sea.

III. The existence of the sea implies the existence of *storms:* the two ideas are inseparably connected in our minds. And is not this life, even to the most favoured individuals, a dark and rainy sea, with only here and there a few sunlit isles of beauty and peace, separated by long and troubled voyages? Time is constantly tossing us about on its restless bosom; and even its smoothest waves are perpetually wrecking something—either laying a fond hope low, or bearing away some cherished form to the silent land, or leaving the impress of disease upon our frames. To many the wail of sorrow ebbs and flows over their whole life like a wave that beats again and again on the same part of the shore. They are driven up and down, like Paul in Adria, under starless skies—through unknown seas—by contrary winds—wishing for the day—all the billows go over them one after another—deep calling unto deep, and wave unto wave. There are many outward storms that beat upon us in this world,—storms of adversity arising from personal,

domestic, or business causes; as soon as one blows past, another is ready to assail us. And there are inward storms,—storms of religious doubt, of conscience, of temptation, and, worse than any of these, the raging of our own corrupt affections and unsubdued desires. Between these two seas many of us are scarcely ever allowed to know what a calm means. But amid all these storms we are strengthened and consoled by the assurance that they are necessary, and are appointed to work together for good. They purify the atmosphere of the soul; they dispel the mists of sin and unbelief, and let in bright sun glimpses of divine love and light; they loosen our hold of earthly things, and our attachment to earthly friends and earthly spots; they arouse us from our sloth and stagnation, and keep us in the vigour and freshness of spiritual activity. Yet still we long for their cessation, and look forward with joyful hope to the region of everlasting peace. In heaven there will be no stormy winds or raging waters. Its sky will be without a cloud, for sin and all its shadows of evil will vanish for ever. The last billow of earth will die away in faint far-off music on its shores. Through the shoals and the breakers, and the sunken rocks of those perilous worldly seas, the Christian voyagers, some on boards and some on broken pieces of the ship, will escape all safe to land—and there shall be no more sea.

"And the sea gave up the dead that were in it." These are the most precious jewels which it hides in its depths. Every swell of the heaving storm shapes a grave—a churchyard hillock on the surface of the

sea; and could we still the waves and descend into the deep, there might we see far down, pillowed on the silvery sands, rows of sleepers who perished in the storm, or, in the shock of battle, or dying of wasting sickness far from land, were lashed to the rude plank and heaved overboard when all was calm and fair. There might we see loved forms for whom many a fond heart has yearned for years with the hope that keeps alive despair. There are no flowers to deck their bier, no friends to come to their resting-places to awaken sad memory, and open the fount of tears afresh. The ocean alone decks their grave with gifts of pearl and shell, and wreathes their brows with sea-weeds rare. The ocean alone sheds the salt tear over them, and murmurs their ceaseless requiem. Oh! what a scene transcending the power of human imagination will that be when the mighty sepulchre shall be opened, and its waters shall vanish away, and the remains of the long lost, that it jealously kept in its coral caves, shall be exposed to view; when in that vast valley—no more of vision, but of blessed reality—there shall be a noise and a shaking among the bones; and they shall come together, and the sinews and the flesh shall come upon them, and the breath of immortal life shall animate them, and they shall stand upon their feet an exceeding great army, and "there shall be no more sea!"

But while the stormy sea, that divides us here and changes our scenes and circumstances, will vanish for ever, there will be another sea in heaven—emblem of the new condition of things. "I saw," says St. John, "as it were a sea of glass mingled with fire; and them

that had gotten the victory over the beast, and over his image, and over the number of his name, stand on the sea of glass having the harps of God." And what a beautiful and expressive type is this of the blessedness of heaven! It is "a sea," emblem of the fulness of peace, stretching away into the illimitable distance—a boundless, shoreless ocean, filling all eternity. It is "a sea of glass," type of the purity and fixedness of that peace—no sin staining its clear transparency, no billow breaking over it, no storm chafing it into foam. It is "a sea of glass mingled with fire," emblem of the glory of heaven reflected in its depths, the burning splendours of the throne, the dazzling lustre of the jaspers, topazes, and rubies of the New Jerusalem. On that opalescent pavement, all who pass triumphantly through the dark waters of Jordan shall plant their weary feet, and shall stand for ever fixed and secure in the everlasting love of their Redeemer.

We are naturally and justly sad when we think of this world as a place of change; but there is a point of view from which it appears a matter of thankfulness and rejoicing that it is so. It is a place of trial and probation, in which the condition of no one is fixed, but a boundless possibility of change for the better is open to every one. For each—for all—there is hope and room for becoming something better, holier, and happier than we are. To the sinner there is a way of escape from wrath—an offer of salvation through Christ. To the Christian there is need for greater growth in grace and meetness for heaven. Soon this time of change will cease to all of us; soon

this world of change will vanish from our view. Death will soon come to close the chapter of our life with these mournful words, "Arise, let us go hence," and to seal our state and condition for ever. An eternal, unchangeable world awaits us, over whose awful portals is written these words, "He that is unjust, let him be unjust still: and he which is filthy, let him be filthy still: and he that is righteous, let him be righteous still: and he that is holy, let him be holy still." "And there was no more sea."

CHAPTER XVI.

THE LAW OF CIRCULARITY, OR RETROGRESSION AN ESSENTIAL ELEMENT OF PROGRESS.

"*One generation passeth away, and another generation cometh: the sun also ariseth, and the sun goeth down, and hasteth to his place where he arose. The wind goeth toward the south, and turneth about unto the north; it whirleth about continually, and the wind returneth again according to his circuits. All the rivers run into the sea; yet the sea is not full; unto the place from whence the rivers come, thither they return again. . . The thing that hath been, it is that which shall be; and that which is done is that which shall be done: and there is no new thing under the sun.*"—ECCLESIASTES i. 4—10.

IT is universally acknowledged that the circle is the archetype of all forms, physically as well as mathematically. It is the most complete figure, the most stable under violence, the most economical of material; its proportions are the most perfect and harmonious; and therefore it admits of the utmost variety consistent with unity of effect. The universe has apparently been framed according to this type. Nature attains her ends, not in a series of straight lines, but in a series of circles; not in the most direct, but in the most roundabout way. All her objects, organic and inorganic, have a tendency to assume the circular form, and in the attainment of this form

consists their highest perfection. The lowly lichen on the wall spreads itself out in a circle; the mushroom in the meadow, with its round cap and stem, grows in fairy rings; the moss-tuft on the tree—the clump of fern in the shady bank—the plot of wild-flowers in the wood—the trees in the forest, alike in their individual and social state, exhibit this form in endless and graceful diversity. The cell, which is the ultimate germ of all life, is round, and every increase which it makes by growth or reproduction, preserves the same shape. The leaf, with all its varied modifications in the different parts of the plant—the stem, the flower, the fruit, the seed—are all more or less circular. So also are the different parts and organs of animals, from the simple primary cell of the animalcule, barely visible under the microscope, up through increasingly complex structures, to the highly organized and wonderfully-formed head of man—the apex of creation; and though dead, inert minerals may seem to offer an exception to this law, crystallizing, or, in other words, attaining the highest perfection of which they are capable, not in circles but in straight lines, yet, when exposed to the influence of natural agencies, they speedily assume the circular form. Angular masses of rock from the quarry, when disintegrated by the weather, or rolled about in water, become smooth and rounded; the granite and the diamond become plastic under the silent touch of the sunbeam and the breeze, and are moulded into curves and spheres. Nay, may we not regard the truncatures of their angles, and the bevelment of their edges—by which crystals are distin-

guished—as attempts to approximate as closely to the spherical shape as circumstances will permit? The various forces of nature, and the properties of the matter upon which they act, are so arranged and balanced, that they invariably bring out curved lines in the surface of the earth. The winds and the waters produce undulating surfaces wherever they operate. The sea and the lake flow in curving waves and ripples to the shore; the rivers and streams meander in silvery links through the landscape; the clouds float in ever-varying curves of magical loveliness along the sky; the very winds—emblems of fickleness and change—obey fixed laws, and blow over the earth in cyclones and rotatory currents. In short, look where we may, we see the surface of the earth and its objects curving in every possible direction: from the rounded form of the highest mountain peak, to the little pebble at the bottom of the stream over which the dimpled waters eddy and ripple in ceaseless music,—from the snow-drift that hangs in sweeping festoons far up the Alps, or the cloud that lies cradled near the setting sun, to the dewdrop that clings to the freckled ear of the cowslip—everywhere we discern the operation of the same striking law; and most, if not all, of the beauty of Nature, and the pleasing effect which she produces upon our minds, may be attributed to this cause.

And as our eyes behold the effects of this law in moulding the forms of nature, so our minds furnish us with evidence of its influence in the plan according to which the different parts of creation have been constructed. In the scale of being, the order of deve-

lopment is not represented by a linear series. Classes and orders do not pass into each other by transmutation—the lower into the higher—the simple into the more complex—in a uniformly straight line, without bend or obliquity, as the advocates of the development theory assert. On the contrary, we find that they approach each other in the lowest members of each, and diverge as they ascend. Thus, it is in diatoms and confervæ—the very lowest orders of plants, and not in flowers or trees, the highest—that the vegetable kingdom makes an approximation to the animal; as we ascend the scale of being, these two kingdoms become more and more widely separated from each other, until at last in the highest representatives of each we behold those vast differences which distinguish a man or an elephant from a palm or an oak-tree. The common comparison of organic nature to a chain admirably illustrates the order of development. All the links are round and complete, and yet are intimately connected each with its neighbour by a tie formed out of its own substance. And so the various orders, families, and genera of animals and plants, are each independent of the others, but all of them have connecting characters and typical resemblances, which are necessary to fill up the plan of the Creator, so that there may be no deficiency nor incompleteness, but an endlessly varied and perfect whole. A chain is a straight line, but it is composed of a number of round links; so there is a continuous advancement in the order of being, but it is by a series of circles. We find the same plan adopted in the order of time in

which species have been introduced into the world. There is no gradual lineal scale of being, from the lowest to the highest organisms, discoverable in the rocks of the geologist. We do not find, as has been asserted by the author of the "Vestiges of Creation," that the lowest strata contain only the rudiments of life—which life improves and develops as we ascend —until in the most recent strata we behold fossils of the highest and most complex structure. Whenever a new order of creation was introduced by Divine interposition, it did not originate from the highest state of the order immediately beneath by a physical or genetic power, nor did this new order of existence carry on a process of development until sufficiently advanced to constitute a still higher order; on the contrary, geological testimony is everywhere conclusive of the fact, that some of the higher forms of life have been among the first introduced, and that these, during the cycle of existence allotted to them, degenerated in size and number, or became differentiated into new orders and species, until the Creator took a step in advance by bringing another race upon the scene. The Divine power successively introduced higher and yet higher classes, and each, by the law of development, continued to differentiate itself, to pass from simplicity to complexity, from unity through diversity to a higher unity. Thus, while there has been a great advance in creation as a system, there appears to have been no advance in any particular order; while the great law which has governed the introduction of successive animal and vegetable species, is that of gradual progressive development

of the animal and vegetable kingdom as an organic whole, the Divine Classifier, in the elaboration and unfolding of His great work of art, has followed the principle of the morphologist, and not the dogma of the Lamarckian or the pantheist.

The same law of circularity may be observed in the alternations of day and night, and in the vicissitudes of the seasons. Each bright blue day of sunshine, with all its work and enjoyment, is folded and shrouded up in its grave of darkness. Night comes, as it were, to undo the work of the day—to reverse the processes and functions of life—to restore the molecules of matter which the sunlight had kept in incessant motion and change to their previous condition, and by this recoil and rest to qualify for greater exertions and further advancement on the morrow; and thus, with alternations of darkness and light, the year progresses to its close. Spring clothes the earth with verdure; summer develops this verdure into its highest beauty and luxuriance, and autumn crowns it with ripeness and fruitfulness; but winter comes with its storms and frosts to mar and destroy the fair fabric which it had taken so many months to perfect. The web of Penelope, with its rich texture of silken greenness, and its beautiful embroidery of fruits and flowers, is unravelled in a single day. And yet this apparently wanton destruction, this retrograde movement, tends more to advance the progress of nature than if summer were perpetual. The exhausted soil is permitted to rest, in order that it may acquire new elements for increased production, and the forces of vitality are suspended that they may burst forth again with more

exuberant energy. Flowers die down to their roots, yet it is no grave into which they have retired, but the hiding-place of power, from whence they shall start into greater beauty and luxuriance when stimulated by the showers and the sunbeams of spring. The winter that strips the foliage from the tree forms another ring of bark and wood around its stem, and adds new growths of consolidated fibre to its extremities; and thus, by a series of forward and backward movements, by a circuitous route of many summers followed by many winters, the earth becomes more and more clothed with verdure, and the fabric of nature reaches a higher and yet higher stage of beauty and perfection. Life is a ceaseless vortex, a perpetual whirlpool, from the beginning to the ending, and from the ending to the beginning. Every death is a new birth, every grave a cradle. In the history of the plant, we find that it springs from a seed, grows in a regular cycle of leaves, culminates in flowers, and at last its exhausted vitality again retires into the seed. In the history of the animal, we find its origin in an ovum, from whence it grows, and carries on a deeply interesting and instructive series of life movements, until, after the lapse of a certain time, its mature powers reproduce the species, and exhaust themselves in the ovum. In the history of the organic and inorganic world combined, we find that matter circulates unceasingly from object to object, and from form to form, each thing being compelled at last to pay back the debt due to nature, and to yield to the earth and air those borrowed elements out of which it originated. "The sun also ariseth, and the sun

goeth down, and hasteth to his place where he arose. The wind goeth toward the south, and turneth about unto the north; it whirleth about continually, and the wind returneth again according to his circuits. All the rivers run into the sea; yet the sea is not full; unto the place from whence the rivers come, thither they return again." And as the night rounds the labours of the day,—as winter rounds the vicissitudes of the year,—as life is rounded by the sleep of death,—as every inequality of the landscape is rounded by the horizon,—so the curve of the globe includes all circular forms, changes, and systems, within one vast and uniform sphericity.

Ascending beyond our earth, to the regions of the astronomer, we find the same law in operation there also. We know nothing of the forms and attributes of extra-terrestrial existence; but we know at least that all the heavenly bodies are more or less circular, and move in more or less circular orbits. The sun, the moon, the planets have this shape: and we know that our earth revolves on its own axis, and moves round the sun; that the solar system advances in space, not in a straight line, but in a series of mighty revolutions round a central sun; and that this central sun in its turn—with all its systems interweaving their respective orbits, speeding their courses about one another, and conducting in their several trains hundreds of worlds—circles round the centre of ten thousand centres. The causes which tend to destroy the stability of the solar system are infinitely small, but by accumulating in the course of ages, they become exceedingly important, and must

change the present system of things, unless corrected by some well-adjusted counterbalancing arrangements. The precession, or the retrograde motion of the equinoctial points, has probably been the cause of those climatic changes upon our earth, indicated by its geological records. The equinox performs an entire revolution once in about twenty-six thousand years; and it is interesting to notice, that the period fixed by Moses for the creation of man and the present arrangement of the earth's surface, is found by astronomers to coincide with the initial position of the equinox, when the earth's seasons were of equal length, and it was just starting on a cycle which it would take so many thousand of years to complete. The sum of the hours of night or cold, preponderating over the sum of the hours of day or heat, or *vice versâ*, in either hemisphere, accumulating in the course of several thousand years, have caused the succession of general cataclysms, separated from each other by long intervals of time, by which the earth has been ravaged. The alternate elevation and depression of the earth's crust; the alternate victory of fire and water, volcano and sea; the ebb and flow of tides, not merely those minor regular oscillations of the ocean which occur in March and September, and alternately flood and leave bare narrow but far-spreading strips of shore, but also those grand secular tides which have punctually recurred every ten thousand years, when it was high water over one whole hemisphere and low water throughout another, accompanied by awful and unimaginable devastation—are the effects of the retrograde movements of the solar

system. Nay, gazing on the nebulæ themselves, many of which are firmaments of stars, placed at immeasurable distances beyond each other, galaxy rising above galaxy, and melting away in infinite space, their spiral and circular shapes irresistibly suggest the idea of vast vortices in which streams and tides of stars are whirling on to some glorious, undreamt of result. There is nothing fixed or final in the heavens; all things are passing through cycles of decay or revivification, and these alternations hasten on the final consummation of all things.

Passing from the physical world to the domain of man, we find there also innumerable traces of the law of circularity. "One generation passeth away, and another generation cometh." Human life is like the wheel which Ezekiel saw in vision. Its aspects and relations, external and internal, are continually changing; one spoke of the wheel is always ascending while another is descending; one part is grating on the ground while another is aloft in the air. The circulation of blood in the veins, the circulation of matter in the body, the circulation of impressions in the nerves and impulses in the muscles, are all helps and means of physical growth; while the vicissitudes of circumstances, the opposite conditions of prosperity and adversity, health and sickness, joy and sorrow, tend to develop the mental and moral character. Action and reaction is the law of man's life. A season of misfortune is usually followed by a season of success; and when circumstances are most prosperous, a time of reverses is not far off. It is in accordance with the principle of circularity that we

naturally expect, that when things are at the worst they will mend; and it is this principle which affords scope and exercise for the blessings of anticipation and hope.

Nowhere, either in science or in morals, has a straight line ever been drawn. There is no distinct, definite line of demarcation between pain and pleasure, between joy and sorrow, between relative evil and good. "Thus far and no further," is said to all moral operative causes, as well as to the waters of the ocean; but the line along the coast is not uniformly straight and unbending; on the contrary, it winds in and out, in gulfs and promontories, in capes and bays, in the most charming and picturesque irregularity. Regarding man from a physical point of view, if, says a thoughtful writer, we only observe the daily cycle of his body, we might rationally assert the stability of the human system, for at the end of every twenty-four hours it comes back to the same point from which it started; at least, the variation is very inconsiderable; and yet it is the accumulation of this same infinitely small variation which constitutes the growth of the body. Regarding him from a mental point of view, the same writer has remarked that, as the human mind grows and develops, the opinions and motives which determine the conduct of life continue to be modified and moulded, until about the average age of forty, when the character becomes unchangeable, opinions become prejudices, and the whole mind is, as it were, petrified. Further progress would be impossible were it not that another generation with minds young and plastic comes forward, carries on

the work a few steps, and becomes petrified in its turn. It is a fact of the deepest significance in the philosophy of human progress, that no great step can be taken in the intellectual or moral advancement of our race except by the sacrifice of at least one generation. There is not a single great truth that has influenced mankind but has passed through a process of contempt and injustice before it was established upon a firm and lasting foundation of popular favour; the invention or discovery that one generation despised is turned to profitable account by the next; the scientific creed that is persecuted in one age forms an undoubted and essential part of the faith of the succeeding age.

The general progress of the human race has been marked by strange fluctuations. It has not advanced steadily in one direction, reaching its present stage of advancement by the shortest and straightest paths. There are no more interesting and suggestive pages in history than those which record the rise and decline of great empires and states. Civilisation after civilisation advances from the dim horizon, reaches the zenith of its prosperity, blazes for a while with unexampled splendour, then sets in darkest midnight. The majestic procession has moved on from one region and one age to another from the earliest dawn of history, but its march has been over the grave of nations. First appeared on the scene the grand old monarchies of Assyria, Nineveh, and Babylon; but their haughty magnificence speedily passed away, leaving behind only shadowy names and a few heaps of uncertain ruins, over which the

unconscious Arab has pitched his tent for ages. Next arose Egypt, that lotus-land of magic and mystery, whose architects built as if for eternity; but its glory and power likewise speedily culminated and disappeared. Typhon conquered Isis; the lyre of Memnon was hushed and broken; the Sphinx became the solution of her own enigma; and the whole land, with its colossal ruins and effete civilisation, has lain for ages in the sun an embalmed corpse, an unburied skeleton, blanched by time, and yet beautiful in its dismemberment and decay. Greece, with its lightning-like genius, interpreting and etherialising every science, art, and philosophy, became for a time the cynosure of the nations, and filled the whole horizon of history with its dazzling radiance. But in the course of a few ages, characterised in the end by anarchy and corruption, it too vanished from view, yielding the foremost place in the van of nations to imperial Rome, whose iron sway extended from sea to sea, and from the river even unto the ends of the earth; until, crumbling beneath the weight of its own vastness and power, it became in its turn an easy prey to the savage hordes from the wild hills of the north. All these successive civilisations—like the successive animals and plants which appeared upon our earth in different geological epochs—had a definite course to run: an origin, an increase, a point of culmination, a decline, and an extinction. Within this course there occurred, under the influence of extraordinary circumstances, cycles of temporary increase and diminution, until finally the entire machine of the nationality ran down.

From the very first, one important branch of the

human family was stamped with the mark of degradation—while another—the race of Shem—was privileged to be the first partaker of the blessing, and to be the originator of the world's civilisation; yet the nations of this stock were destined to displacement, for "Japhet shall be enlarged, and shall dwell in the tents of Shem." The prophecy of Noah has been remarkably fulfilled within the comparatively narrow area of that region which stretches from beyond Jordan to the shores of the Levant. For eight hundred years—so we are informed by the sacred records—the sons of Ham, through Canaan, increased and multiplied in this favourable region: founded mighty cities, accumulated great wealth, and subdivided their inheritance among different tribes and kingdoms of a common descent. At length, however, the descendants of Shem, through Eber, accomplished their destiny. The promised land became their possession, the remnant of the degraded Canaanites their bond-servants. For eleven hundred years it became the theatre on which was displayed the triumphs of David, the glories of Solomon, the vicissitudes of the divided nationalities of Judah and Israel, and the sublimest of all events, the incarnation of the Son of God, and the consequent redemption of the world. Then came another displacement: the Hebrew race was driven forth from the land, and for eighteen hundred years it was alternately occupied and lost by Roman and Saracen, by Turk and Arab, until now it has become once more the heritage of the Canaanite, as an appanage of the Ottoman empire. Thus, as Professor D. Wilson has well remarked, the sceptre of

that little realm has passed from nation to nation, through the historical representatives of all the great primary subdivisions of the human family; and a record of its ethnological changes would constitute an epitome of the natural history of man. Although at present bound by the visible restrictions of providence, forbidden to spread forth its riches, ruled by strangers, under whose helpless fanatical sway everything withers, inhabited by an alien race, of all others most indifferent to its holiest memories, and desecrated by an idolatrous worship, numerous prophecies plainly intimate that it is "waiting solemnly, with the life pent up in its bosom, till the call of God shall wake it into more than the luxuriance of old," and till the wandering Hebrew nation, the great pilgrim of centuries, shall return from all lands and places purified by trial, to take an enduring and enlightened possession of it.

Casting our eyes abroad over the world at the present moment, we find unmistakable evidences of this process of displacement and extinction accompanying the progress of the human race. The colonist of the new world only advances by the retrogression of the red man; and in Australia, in South Africa, wherever the off-shoots of our civilisation have succeeded in rooting themselves, the aboriginal races, incapable of absorption or amalgamation with the superior race, are perishing rapidly and hopelessly amid their primitive barbarism. This inevitable law of retrogression would seem to suggest the humbling lesson, that a time will come when even the Anglo-Saxon civilisation, whose star is at present in the

ascendant, whose power is at present a conquering power, and gives no indications of decay, shall be numbered among the things that were, and a grander and nobler development take its place in new regions and under more favourable heavens—perhaps in lands now sunk in the depths of heathenism and barbarism. It is not beyond the bounds of probability that the "Briton of the south" may yet supplant the Briton of the north, and that Macaulay's New Zealander will actually stand and moralise amid the ruins of London on the vanity of human greatness. The far-east was the land of science and philosophy when Europe was inhabited by savages; and under the influence of a Christian faith she may regain her ancient supremacy, and "the fires of genius burn again with purer splendour on the very spot where first they were kindled." For instead of a light shining more and more into the perfect day, everywhere light rises out of darkness, descends to darkness, and breaks out of darkness again: "the morning cometh as well as the night."

Such facts as these show us how hopeless is the boasted gospel of natural progress; how vain it is to expect that humanity can develop itself by its own unaided powers; that any race or country is capable of carrying on the process of improvement uninterruptedly and continuously, by the simple motherhood of nature. Man is, indeed, naturally progressive to the fullest extent of his capacities; and whatever he is capable of becoming, the aspirations of his soul are in themselves proofs and pledges, that he will ultimately become. In the progress and revolutions

of time he has steadily advanced to a nobler dignity. Each civilisation that appeared on the stage of history borrowed from its predecessor materials for a higher range of advancement. The Roman civilisation was a propagation of the Greek, and the Greek of the Egyptian and the Hebrew. But this progressive elevation was not attained by a natural process of development, carried on in a uniform, undeviating, straight line. On the contrary, wherever humanity was left to its own unaided powers, unassisted by supernatural means and influences, it has everywhere in the end degenerated and declined, however long and glorious may have been its heroic age. And analogy would lead us to conclude, that as it has been in the past, so it may be in the future, that again and again may be exhibited the solemn spectacle of civilisations "advancing in charmed circles," races passing from hardihood to courage, from courage to conquest, from conquest to power, from power to wealth, from wealth to luxury and effeminacy, and from thence to the last stages in the melancholy drama—corruption, decline, and extinction. Again and again may be seen the same sad sight presented by the ancient monarchies of Assyria, Egypt, Greece, and Rome, of nations passing into barbarism by "the strange and unexpected path of a civilisation that had not only spent its own force, but had exhausted the race upon which it operated." "There is a good time coming" is a pleasant and consoling refrain, taken up by all the weary and the restless, and accepted by the general human heart, under the pressure of privation, hardship, or sorrow, with all the

ardour and earnestness of faith. But that palingenesis of the earth, come when it may, will not be brought about by the law of an infallible development, by a principle of growth and progress, inherent in humanity, as a consequence of that system of improvement, and those processes of education, upon which the world seems to be placing its reliance. It will be ushered in, as "the good time" ever has been ushered in, amid tokens of universal degeneracy and decay, and by a total overthrow of the existing condition of things. Who can tell what convulsions will attend the death agonies of old systems and the birth throes of the new era? The phœnix of new institutions can only arise out of the conflagration and ashes of the old. The sad burden of Dumah will be heard once more. The night must reach its darkest point before the glad, rosy light of morning will break upon the horizon. But in the midst of it all, of nothing can we be more certain than of this, that it is not a blind chance which presides over the revolutions of states, the rise and fall of nations and civilisations, but an all-wise and all-powerful Providence, interfering to prevent at every stage in the history of the world, the final deterioration of society, by the introduction of successively higher civilisations; and that there can be no hope of real and lasting progress in right lines apart from supernatural interference, and the regenerative and new creative power of that divine grace which transcends mere natural conditions and causes. Over the wheels of history, as over the wheels in Ezekiel's sublime vision, is "the appearance of the likeness of the glory of the Lord."

History is given to repeating itself. The persistency with which forms of faith and aspects of society appear age after age, is truly marvellous. Fashions of dress, schools of art and philosophy, theories and speculations of science and theology, seem to have the same kind of periodicity which marks the phenomena of nature. As regularly as the same primroses bloom on the woodland bank spring after spring, and the same roses blush by the wayside summer after summer, so regularly and uniformly do the same modes of thought, and the same type of manners, appear and reappear. Phases of human error and folly are found occurring again and again, after long intervals. Delusions and deceptions, religious and social, are seen manifesting themselves in the world, long after it had been fondly hoped that they were dead and buried; springing up again, like noxious weeds, from some tap root deep down in the core of the human heart, when circumstances favourable for their development are present. Amid all the enlightenment of Christianity, religious sects and systems—such as Mormonism, start up with mushroom-like rapidity from the corruptions of society, and bring back to us once more the exploded beliefs and depraved practices of the middle ages. Amid all the triumphs of art and science, when mutual commerce and friendly political relations seem to have melted all the separate nationalities into one, and peace, apparently the most profound, unfurls her blue banner over prosperous and contented kingdoms, suddenly—when least expected—by a strange and almost inevitable fatality, war arises, to destroy the

general happiness and harmony, and to put back the progress of civilisation and humanity whole centuries. In every department of human affairs, such instances are easy to find, proving the truth of the trite aphorism, that "there is nothing new under the sun;" that the moral world, as well as the physical, revolves in a circle, and thus necessarily often comes back to the point from which it started. These examples of retrogression appear melancholy and disheartening to those who believe in the uninterrupted development of mankind in straight lines; but rightly considered, they are far from being perplexing and unintelligible. The law of circularity is also a law of *conservation;* and every instance of retrogression may be regarded as a brake upon the wheels of the car of progress, absolutely necessary for its safe and steady motion.

The Bible affords so many illustrations of this doctrine, that it is somewhat difficult to make a selection. Almost the first event in the spiritual history of the human race, was an act of degradation, a retrograde movement. "God created man upright, but he has sought out many inventions." By an act of disobedience, he fell from the condition of holiness and happiness in which he was created, into an estate of sin and misery; and as the result of that single backward step, the whole world has been subject to a curse, which falls upon soul and body, and extends through time and eternity. And yet, by a wonderful interposition of divine love, this retrograde step, which issued in so much disaster, has raised man to a higher position than he could have attained, even had he continued pure and sinless as at the first. He is not

merely brought forward to the point from which he retrograded: he is advanced greatly beyond it. Schiller boldly says, "the Fall was a giant stride in the history of the human race." "I am come," says Christ, "that ye may have life, and that ye may have it more abundantly." If He endured and suffered so much to clear away the rubbish from the foundation, the greatness of His atonement and the divinity of His nature are clear and incontestable proofs that He will build upon it a glorious superstructure.

The Deluge affords another illustration of the law we are considering. Whatever opinions may be entertained regarding the superficial extent of the flood, all authorities are at least agreed as to the fact, that it destroyed all the inhabitants of the world, with the exception of Noah and his family; and although it may thus appear a retrograde step, reducing the world to a desolate and solitary condition, it was productive of incalculable good. It was a terrible remedy for a terrible disease. Wickedness of every kind had attained such a universal power and virulence, that it was better to sweep off at once a whole infected generation, leaving the population to be replaced by the purer stock that survived, than to allow the moral disease to perpetuate itself indefinitely. Another retrograde movement, of scarcely less importance, occurred very speedily after this event. The confusion of languages, and the consequent dispersion of mankind, and their separation into distinct nations and races, seems at first sight an unaccountable procedure—hostile to the best interests and wisest processes of civilisation.

and yet, on the contrary, it has proved eminently helpful in forwarding the progress of the human race, by the formation of national feeling or patriotism, and the full, harmonious development of the "many-sidedness" of human nature.

Descending the stream of Scripture narrative, we find that Joseph was sold into slavery as the path to the highest honours of Egypt; and that the latter end of Job, after he had been stripped of everything, was more prosperous than the beginning. When the children of Israel had reached the borders of Canaan, after their long and toilsome wanderings in the wilderness, and the enterprise which had been attended with so much trouble and hardship, and from which they had hoped to reap the richest result, was on the eve of being accomplished, the divine command was given them to return to the very point in the wilderness from which they started. The immediate cause of this ignominious failure and retreat, was no doubt their own obstinacy and unbelief. It was designed, in the first instance, as a punishment for their want of confidence in God; but as circumstances turned out, it became, in the end, one of the greatest national blessings that could have befallen them. A wise and benevolent purpose lay hid under the apparently harsh and severe judgment, which subsequent events unfolded and explained. The children of Israel, as their conduct too plainly proved, were not as yet in a fit state to occupy the land, and carry out God's intention of supplanting its wicked and idolatrous tribes by "a peculiar people, zealous of good works."

The marks of Egyptian bondage were upon their souls, as well as their necks. Four hundred years of degradation and oppression had made them a servile and cowardly race. They had gradually been passing from the nomadic to the agricultural life, and had contracted much of the impure religious ideas and licentious manners of the Egyptians. They required, therefore, to be brought back to the simple religion of their fathers—a religion without images, hieroglyphics, dogmas, or mysteries, to corrupt and fetter the minds of the people—and to a form of government calculated to preserve them in the purity of their faith. They needed the discipline of the wilderness—the courage, devotion, and ardour which communion with nature, in her sternest and most savage aspect, seems, by a secret law of assimilation, to infuse into the soul. One generation must fall in the wilderness, and a new one must arise, free from the corrupt prejudices and practices of Egypt, inured from earliest infancy to hardihood, and taught and exercised in the practice of every virtue, under the immediate superintendence of God Himself. Thus the wave which seemed to carry them farther from the shore, and to make shipwreck of their dearest hopes, returned, and raised them to a higher and securer place on the beach of national greatness and goodness.

In the New Testament we also find several striking examples of this law. The salvation of the world is accomplished through treachery, false witness, and a cross. We are told by the evangelists that the disciples, after the resurrection, went back by the

express command of Christ to Galilee, to the scenes and pursuits in which they were engaged when first called to follow Him. The same circumstances were repeated, the same miracles performed, as on the first occasion. This retrogression seems to have been wisely ordered as a preparatory discipline for reinstating them in that office from which, by their shameful desertion and denial of Christ, they had fallen at His death. By bringing them back to the old life, to the beginning of their course, he not only gave them a significant symbol of his willingness to overlook and forget all that had occurred during the interval, but also placed them in more favourable circumstances for the fulfilment of their noble mission as Christ's witnesses and apostles to the world. He gave them a fresh start, as it were, a new opportunity, untrammelled by former hindrances, to run their course; while their sense of guilt, instead of exercising a depressing influence, as it inevitably would do, if left amid the awful associations of Jerusalem, would stimulate them away from the scene of its commission—to greater efforts to redeem the past. The careful reader will observe a close similarity between the closing chapters of Revelation and the commencement of Genesis. The objects that disappeared from view after the Fall are once more ushered upon the scene; paradise and the tree of life are restored; the ends of Scripture history long and widely severed are united, and the glorious circle of revelation is complete. But though the curtain falls upon circumstances somewhat similar to those upon which it rose, a great advance has been made during

the interval. The garden, emblem of the spontaneous natural beauty and innocence of mankind before the Fall, has been transformed into a city, type of the toil and suffering through which that lost innocence has been restored, and one solitary human pair has increased to a multitude which no man can number. So also in the first chapter of John's gospel, and in the first chapter of Genesis, we have not only a striking instance of Scripture parallelism, but are presented, to use the words of a recent ingenious writer on geology, "with the magnificent spectacle of immense creations travelling in a cycle and returning to the source of their being." God begins the work of creation, and in the birth of the God-man the work is finished. Moses informs us of the origin of man, the highest physiological form of life; John informs us of the return of that life, in its highest psychological form, to its origin and source. The Old Testament tells us that life went forth from the "Word;" the New Testament tells us that life terminates in that Word becoming flesh and "dwelling among us." To mention only one more instance: in the destruction of Jerusalem, the religion of Judaism reached its consummation and close; the burning temple was the funeral pyre on which its last obsequies were performed. This awful revolution, compared by our Saviour to the dissolution of all things at the last day, was overruled to usher in a dispensation of gospel peace, and love—a blessed religion untrammelled by forms, unchained to place—free of all the countries and nations of earth. From the very ashes of Jerusalem sprung up the most powerful and

universal of all kingdoms, before whose spiritual might the proud monuments of pagan superstition, consecrated by the worship of a thousand years, and supported by the authority of the greatest monarchies, fell one after another; and to whose benign influences and lofty sanctions, the foremost nations of earth trace their prosperity and civilization. Titus destroyed the centre and seat of the Jewish religion; the Jewish religion in its turn "has overthrown the temples and monuments raised to his father and himself in their imperial capital; and the God of Abraham, of Isaac, and of Jacob, is now worshipped before every altar in Rome."

The first and most prominent doctrine which Christianity teaches, is the doctrine of retrogression as an essential element of progress. "Repent, for the kingdom of heaven is at hand," was its watchword when it first raised its voice amid the deserts and mountains of Judea. Repentance is the germinal bud of living Christianity. As Vinet says, the passage from knowledge to possession, from belief to life, our Lord has strikingly represented by the figure, so singular at first sight, of a return from mature age to childhood. "Except ye be converted, and become as little children, ye cannot enter the kingdom of heaven." And the beautiful profound truth hidden under this paradox is, that not only are the spirit of childhood and the spirit of manhood not inconsistent with each other, but their union is essential to the highest spiritual culture. The human soul never is so great as when it humbles itself in childlike meekness to be a learner at the feet of divine wisdom; and I

believe that man requires the aid of the Holy Spirit, not to enlarge his intellect and extend his knowledge, but merely to reduce him to the simplicity, the ignorance, the faith of childhood. There is but one path to the acquisition of divine truth; the ignorant, the simple, the poor are ready to enter upon it, and the Spirit has only to open the gate; but a previous process is necessary for those who pride themselves upon their knowledge and reason. "If any man will be wise, let him become a fool." They must return and enter by the same gate of child-like humility and trust, and learn at the feet of Jesus without question or dispute. The true Christian is not one who has expelled one theory or system of truth from his mind to give place to another; he is essentially a man humbled, degraded in his own esteem, brought down from the lofty pedestal of his self-righteousness to depend upon the righteousness of another, brought back from the self-sufficiency of his own way, to lean upon the mercy that is no respecter of persons, but is equally bestowed upon all who seek it irrespective of their character or station. His whole life is a renunciation of self, becoming poor in spirit, humble in mind, contrite in heart. It is an unlearning of all his own wisdom, a foregoing of all his own reason; and by this process of self-abnegation, this discipline of going backwards, the Christian becomes spiritually ennobled.

The afflictions and trials that bring the Christian low, contribute in the end to raise him to a higher condition of heavenly-mindedness. They may be regarded as a complication of inverse aids and assist-

ances, by a right use of which the force of spiritual character may be more successfully displayed. And just as the earthquake that fills a wide tract of country with ruins, and the storm that strews our coast with wrecks, or tears down our forests, or destroys life, are links in the chain of the weather which purifies our atmosphere, and supplies the materials of health and vigour to all animated nature, so are suffering and trials the iron links in that golden chain which connects earth with heaven. It is not suffering *then* glory, but suffering *therefore* glory. Our light affliction *worketh* out an exceeding great and eternal weight of glory. Nay, the Christian's very backslidings work together for his spiritual and eternal welfare, and the very causes of his fall will point to an improved existence. Every failure will administer to him a lesson of future circumspection and humility; and of his sins and shortcomings he will construct a defence to his soul against future lapses, just as the farmer builds a wall to protect his field of the very stones which he had gathered out of it. In short, from the moment the Christian enters the strait gate to the end of his course, he advances by a spiritual recoil, he gains by loss, he is made perfect through suffering, he makes progress through retrogression. In this he follows afar off the example of his blessed Lord, who, though he was rich, yet for our sakes became poor; who, though the Creator and Proprietor of the whole universe, condescended to the lowest positions and offices on earth; who, though the Source of all wisdom and knowledge, the Originator of all law and root of all authority, was made

under the law, that He might by His obedience and sufferings redeem us from its curse. And for this sublime self-abnegation, this voluntary humiliation, God hath highly exalted him above every name, as a pledge and guarantee that all who are thus conformed to His image shall share His glory, that those who suffer with Him shall reign with Him, that those who bear His cross shall wear His crown.

Death seems to the eye of sense the saddest and most mysterious of all retrogressions. The wheel is broken at the cistern; the circle of life completes itself, and returns to the non-existence from which it sprung. "Dust thou art, and unto dust shalt thou return," is the beginning and end, the source and destiny of the material part of our being. Death despoils us of all with which we were invested, terminates all the functions and feelings of life, resolves the body into its original particles, and scatters them over the face of the earth. But though to the eye of sense appearing a great loss, an unaccountable retrogression, it appears to the eye of faith, gifted with a keener and farther-reaching vision, a great, an immeasurable gain. The day of death is better than the day of birth, because death is a higher and nobler birth. The grave is an underground avenue to heaven, a triumphal arch through which spiritual heroes return from their fight to their reward, made conquerors, and more than conquerors, through Him that loved them; the dressing-chamber in which the believer puts off his sordid and polluted garments, and puts on his beautiful wedding robes, to arise and meet the Lord in the air. The attainments that have

been made in this life will be carried forward to the illimitable future; the holiness and knowledge that have been acquired amid many an earthly scene of trial and sorrow will be transferred to heaven, and will form the starting-point, as it were, from whence the soul will commence anew its onward course towards infinite excellence and perfection. Nay, the continuity of the path will not be broken, It is no strange and unknown scene upon which the just are ushered at death. The sacred employments of life will continue without pause or interruption amid circumstances the most favourable and congenial. The river that hides itself for a time in the earth, and breaks forth at a distance with a greater volume and a wider channel, does not sever its connexion with the former part of its course. The same fountains that poured their tribute into the parent stream continue to swell its prouder tide; the very flowers that were strewn on its surface are borne upon its waves through the temporary darkness, and wafted along through fairer valleys, and beneath brighter heavens. In the light of this consoling reflection, it is a matter, not of regret, but of congratulation, that life is rapidly rounding itself to its close. "What a superlatively grand and consoling idea is that of death," wrote John Foster to a friend. "Without this radiant idea, this delightful morning star, indicating that the luminary of eternity is about to rise, life would, to my view, darken into midnight melancholy. Oh! the expectation of living *here*, and living *thus* always, would be indeed a prospect of overwhelming despair. But thanks to that fatal decree that dooms us to die, thanks to that

Gospel which opens up the vista of an endless life, and thanks, above all, to that Saviour friend who has promised to conduct all the faithful through the sacred trance of death into scenes of Paradise and everlasting delight." How soon, in the experience of every one, does the soul, too great for this passing and perishing world, become dissatisfied with everything here, and most of all with the wide disproportion between the attainments it makes and its capacities and desires. How soon does the heart weary of dragging itself round the same monotonous circle, Ixion's torturing wheel of desire and disappointment. Long before we have reached the assigned limits of life, we have looked around, like Monsieur Necker, and become familiar with the whole scene, and though we are not satisfied, we are sated. We feel our need of a new residence, and a new sphere of activity. We long to be placed on a higher vantage ground, to try the untried, to know the unknown, and death kindly comes to gratify this longing of the soul, to release us from the narrow, confined range of being here, to take us by the hand along the steep and narrow path that winds up the mountain side and leads from our valley out into the golden West.

One more vision of retrogression, the sublimest and the most awful, reveals itself in dim outlines to our gaze from the pages of revelation. When the earth shall have served the purpose for which it was created, as a scene of circumstances and temptations for the education of the immortal spirit, it will be reduced, we are told, to the state of chaos from which it sprung. "The elements shall melt with fervent heat, and the

earth, and all the works therein, shall be burnt up." And yet this sublime retrogression will be necessary to bring in a better world, where sin and sorrow shall be unknown. The scene of probation passing through this terrible ordeal will become the scene of enjoyment; and earth, purified by the baptism of fire, shall be transformed into heaven. Whether after this last and grandest act in the drama of time there shall be room or occasion for any more retrogressions, we know not. It may be that, in the physical arrangements of the eternal world, the law of circularity may be as necessary as it is in this world. But in the moral world of eternity we cannot think, without detracting from its perfection, that retrogression will be any more an essential element of progression. "All old things are passed away, and all things are become new." The regenerated and glorified creation will revolve as of old around the throne of the Most High, and the saints in bliss will "pass into higher circles of service, as they dilate from within to larger capacities of blessedness;" but there will be no recoil, no backsliding, no retrogression. There will be no losing of present advantages to gain greater, no going back to the beginning in order to commence a new and nobler course. Joy will no more be purchased by suffering, victory by defeat, exaltation by humiliation, life by death. There will be no night with its rest and its relapses, no sun with its alternations and vicissitudes, no sea with its changes and separations. The life of heaven, illumined and quickened continually by the immediate presence and power of the infinite Jehovah, shall flow on an

unebbing tide; higher, stronger, farther on with every heave of the restless wave, never pausing to recover strength, never turning back to gain increased momentum, but with resistless, uninterrupted, undiminished volume, filling all eternity with the beauty and the gladness of its perfection.

THE END.

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